

AGRICULTURAL ELEMENT

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Approved By:

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Double Line= Additions

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IMPERIAL COUNTY GENERAL PLAN AGRICULTURAL ELEMENT

I. INTRODUCTION

A. Preface

Imperial County contains one of the finest agricultural areas in the world. This accomplishment is due to several environmental and cultural factors including good soils, a year-round growing season, the availability of adequate water transported from the Colorado River by a complex canal system, extensive areas committed to agricultural production, a gently sloping topography, and a climate that is well-suited for growing crops and raising livestock. In recognition of the importance of agricultural production to Imperial County, and in view of several potential threats to continued success, the County Board of Supervisors directed that an Agricultural Element be developed.

Adoption of the Agricultural Element of the Imperial County General Plan demonstrates the long-term commitment by the County to the full promotion, management, use, and development and protection of agricultural production. This Element will guide County staff activities, inform current and prospective developers of agricultural and non-agricultural lands, and provide general information and reference about the County's agricultural goals and objectives.

The Agricultural Element and the implementing County Ordinances for agricultural operations, activities, and industries shall ensure compatibility with adjacent land uses and provide clear guidelines for decisions in agricultural areas. The policies and objectives of this Element shall legally bind the County, just as other policies and objectives are intended to satisfy the law for the State-mandated Elements in the County's General Plan. This Element provides an informational base for the various policies and implementation of Imperial County agriculture; it does not zone, regulate, tax, or provide staffing for agricultural activities.

The Agricultural Element is composed of four chapters:

Chapter I describes the nature of the Agricultural Element, its relationship to the General Plan as authorized by the California Government Code, and benefits of agricultural production.

Chapter II examines existing conditions, trends, and issues of agricultural production in Imperial County.

Chapter III presents the goals and objectives of the Element.

Chapter IV identifies implementation programs and plans.

B. Purpose of the Agricultural Element

The Agricultural Element is an optional Element of the Imperial County General Plan, as permitted by Section 65303 of the California Government Code. Although this Element

is not mandatory, it must comply with requirements that are requisite to all Elements of the General Plan. Legislative intent must be fulfilled as set forth in Section 65300.5 of the Government Code: "... The General Plan and the parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency..."

This Element is intended to be a comprehensive, internally consistent, and long-term expression of community goals with regard to agriculture, and will serve as the foundation for development decisions by the County Board of Supervisors. An overall purpose of the Element is to describe the status and trends of agricultural resources in the planning area and to identify the goals, objectives, policies, and measures and time frames related to conserving agricultural lands while minimizing or avoiding conflicts with urban and other land uses.

It is noteworthy that on August 21, 1973, the Board of Supervisors adopted the Open Space Element of the County General Plan which states the following:

The preservation of prime agricultural lands is beneficial to the public at large and adopted policies should encourage this end. The identification and preservation of prime agricultural land, based upon soil characteristics, crop types, and water supply should provide the foundation for a rational and defensible preservation program. Refinement and clarification of the goals, policies, and objectives necessary to maintain the economic viability and importance of agriculture in Imperial County, will be found in the Proposed Agricultural Element... (p. 23).

The County Board of Supervisors appointed an Ad Hoc Advisory Committee in 1990 to help the County prepare a General Plan Update. On August 23, 1990, the Ad Hoc Advisory Committee decided to recommend that an Agricultural Element be prepared for the General Plan. On October 9, 1990, the Board reviewed the Committee's recommendation and approved the preparation of this new portion of the General Plan. Although the County has long recognized the value and need for preservation of prime agricultural lands, the present Agricultural Element is the first to be prepared.

Also in 1990, the Agricultural Commissioner's Office prepared and obtained the approval of the Board of Supervisors for the "Right-to-Farm Ordinance". The Agricultural Ordinance states, in part, that "It is the declared policy of this County to enhance and encourage agricultural operations within the County. It is the further intent of this County to provide to residents of this County proper notification of the County's recognition and support through this ordinance of those persons' and/or entities' right to farm."

C. Benefits of Imperial County Agriculture

Agriculture has been the single most important economic activity of Imperial County throughout the 1900s, and is expected to play a major economic role in the foreseeable future. The gross annual value of agricultural production in the County has hovered around one billion dollars for the last several years, making it the County's largest source of income and employment. Agriculture also represents a major source of tax revenue for the County, and supports the purchase of numerous local goods and services. The County's overall economic stability and well-being are intricately related to the economic status of this industry.

Aside from economic benefits, Imperial County agriculture is a major producer and supplier of high quality plant and animal foods and non-food products. Over 120 types of crops are grown in the County. Field crops (such as alfalfa), row crops (such as lettuce, carrots, and melons), and livestock (especially cattle) represent significant contributions to the nation's diet, health, and well-being. In addition, Imperial County agriculture makes efficient use of land, water, good soil, climate, and other natural resources.

The agricultural system is currently diversifying by the establishment of aquaculture and possible reintroduction of significant dairy production. Aquaculture offers an opportunity to put poorly drained clay soils which are only marginally useful for traditional agriculture to productive, high valued crop use. The ratio of crop value to land used by aquaculture is relatively high. Most existing aquaculture operations were started with capital brought into Imperial County. Capital improvements made to real property and equipment purchased for these operations add substantially to the County property tax base, and most aquatic products are sold out of the County, thus bringing new money into the County. Imperial County stands to benefit immensely from these industries which, among other benefits, provide year-round employment and job opportunities to people at many educational and skill levels.

An indirect benefit of agriculture in Imperial County is the creation of modified wetlands that attract useful and beneficial wildlife. The numerous canals, irrigated fields, reservoirs and evaporation ponds, aquaculture facilities, and the Salton Sea provide important habitats for various listed, protected, and other animal, bird, reptile, and fish species. Considerable recreational fishing and hunting is also made possible as a side benefit of agriculture. Under certain circumstances, agricultural facilities may qualify as constructed wetlands and satisfy state and federal concerns over the net loss of wetlands.

II. EXISTING CONDITIONS AND TRENDS

A. Preface

Agricultural production has been the major economic industry in Imperial County throughout the 1900s. This chapter summarizes the early historical development of this industry, describes the existing conditions, and reviews recent trends and issues related to continued production.

B. History of Imperial County Agriculture

Ethnohistoric research has demonstrated that upon European contact in Imperial County in the 1700s, the Kamia Indians, a desert subgroup of the Kumeyaay (Diegueño) Indians whose territory included coastal and inland regions of San Diego County, were using dams and ditch systems to irrigate land along the New and Alamo Rivers. Annual flooding of the Colorado River made desert cultivation of corn, beans, squash, pumpkins, gourds, and watermelon possible.

Dr. Oliver M. Wozencraft, in 1849, was one of the first newcomers to the County to recognize the region's potential for irrigation development. Irrigation water was first delivered to the Imperial Valley in June 1901, by the California Development Corporation by diverting it from the Colorado River through a channel cut in Mexico to the Alamo River. After crossing the International Border east of Calexico, water was diverted from the stream to irrigate crops. Until this time, although many people traveled through Imperial County, the area held little attraction for settlers. Irrigation by the Alamo Canal Project soon led to a substantial population base in the area and the establishment of several towns. More irrigation ditches were completed and rapid development occurred as settlers poured into the area.

In 1905 the Colorado River flooded and ran uncontrolled through Imperial Valley, inundating 488 square miles of farmland and creating the Salton Sea. Several decades were required to improve the water delivery system, culminating in the completion of the All American Canal, which replaced the Alamo Canal, in 1941. With a reliable water system, operated by the Imperial Irrigation District since 1911, and the construction of the Southern Pacific Railroad and paved highways, the County's population and agricultural industry grew. All larger towns and most smaller communities grew up as agricultural centers or shipping stations. Today, agriculture remains the main economic resource in Imperial County.

C. Existing Conditions

For the purposes of this Element, discussion of the existing conditions is separated into the two major types of agricultural production in Imperial County: irrigated crop production, and livestock production (including aquatic products).

1. Irrigation Agriculture

Imperial County covers an area of 4,597 square miles or 2,942,080 acres. Approximately 20 percent of the land is irrigated for agricultural purposes, most notably the central area known as Imperial Valley (512,163 acres; *Imperial County General Plan Overview*, September 1985). Two other major irrigated areas are Bard Valley (14,737 acres) in the southeast corner of the County, and Palo Verde Valley (7,428 acres) in the northeast corner (Figure 1).

Favorable climate, productive soils, and the availability of irrigation water have permitted Imperial County to become a leading producer of agricultural products. Irrigation agriculture in the County is extremely diverse and includes numerous types of vegetable crops including lettuce, carrots, onions, tomatoes, cauliflower, and broccoli; alfalfa, Sudan grass, and other animal feed; sugar beets; wheat and other grains; melons; cotton; and various citrus, fruits, and nuts. In 1990, Imperial County surpassed one billion dollars in gross income from all agricultural products combined, and in 1988, 1989, and 1991, the gross income was a little under the one billion dollar figure (Table 1). Vegetable and melon crops, as a category, have traditionally represented the highest gross value, followed by field crops, fruit and nut crops, seed crops and nursery products, and apiary products (Figure 2). Detailed descriptions of crop production values and acreages cultivated are provided annually in the Imperial County *Agricultural Crop & Livestock Report* by the Agricultural Commissioner.

Two resources that are vital to past and future agricultural production are productive soils and adequate water. A review of these two resources is important for placing many of the trends, issues, goals, and objectives raised in this Element into perspective.

a. Productive Soils

The rich soils of Imperial County, and particularly of the Imperial Valley, were created by periodic flooding of the Colorado River over thousands of years which left deep, rich deposits of silt. Information on the adequacy and importance of soils in Imperial County, taking into account general soil conditions and characteristics, is available from two important sources: the U.S. Department of Agriculture Soil Conservation Service, and California State Department of Conservation. The Soil Conservation Service (SCS) has grouped soils into eight capability classes according to their suitability for most kinds of field crops. These classes are defined as follows:

Class I. Soils have few limitations that restrict their use.

Class II. Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III. Soils have severe limitations that reduce the choice of plants, or that require special conservation practices, or both.

Figure 1 - Existing Agricultural Lands in Imperial County

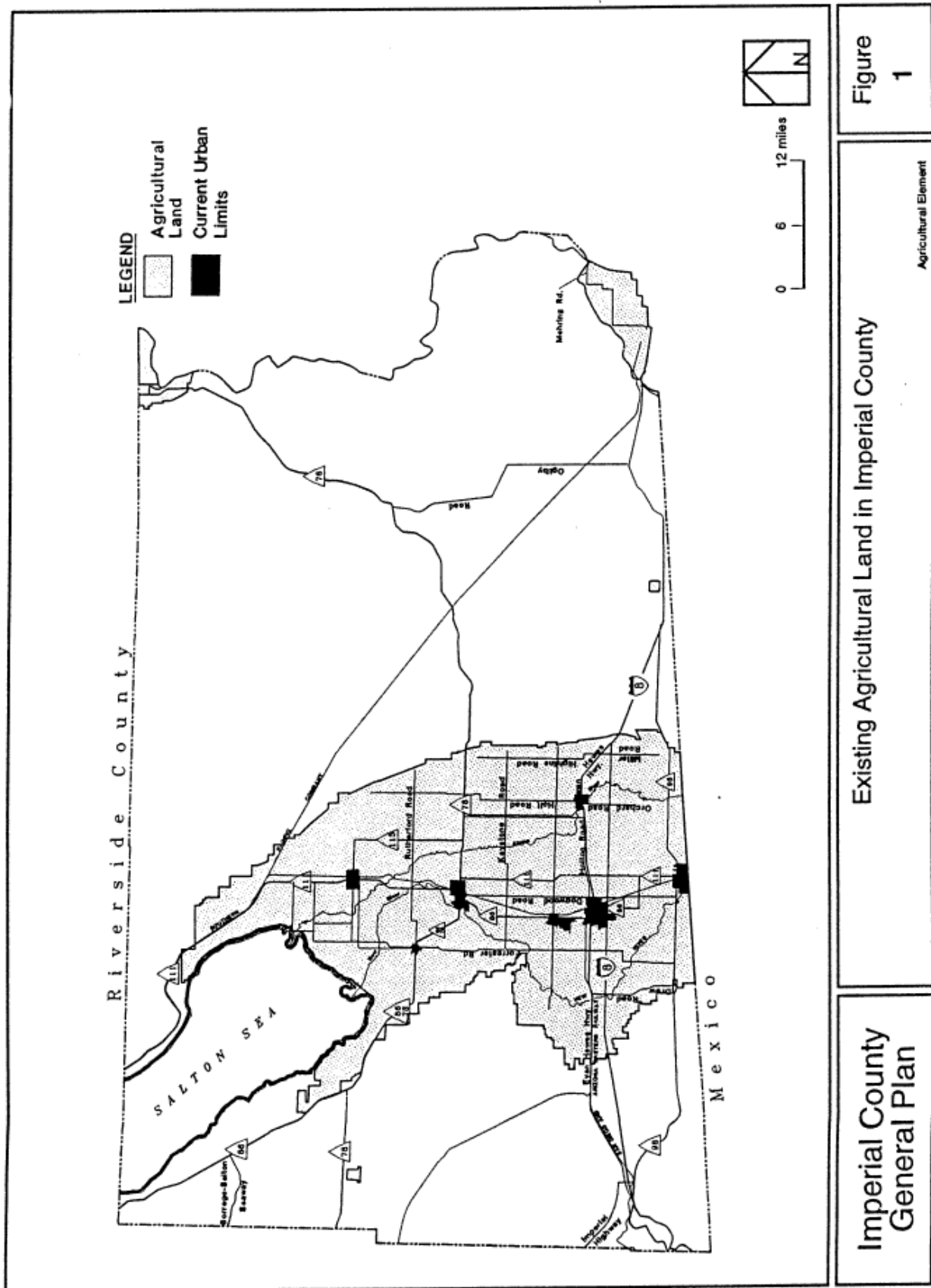


Figure 2 - Gross Values of Selected Agricultural Crop and Livestock Commodities

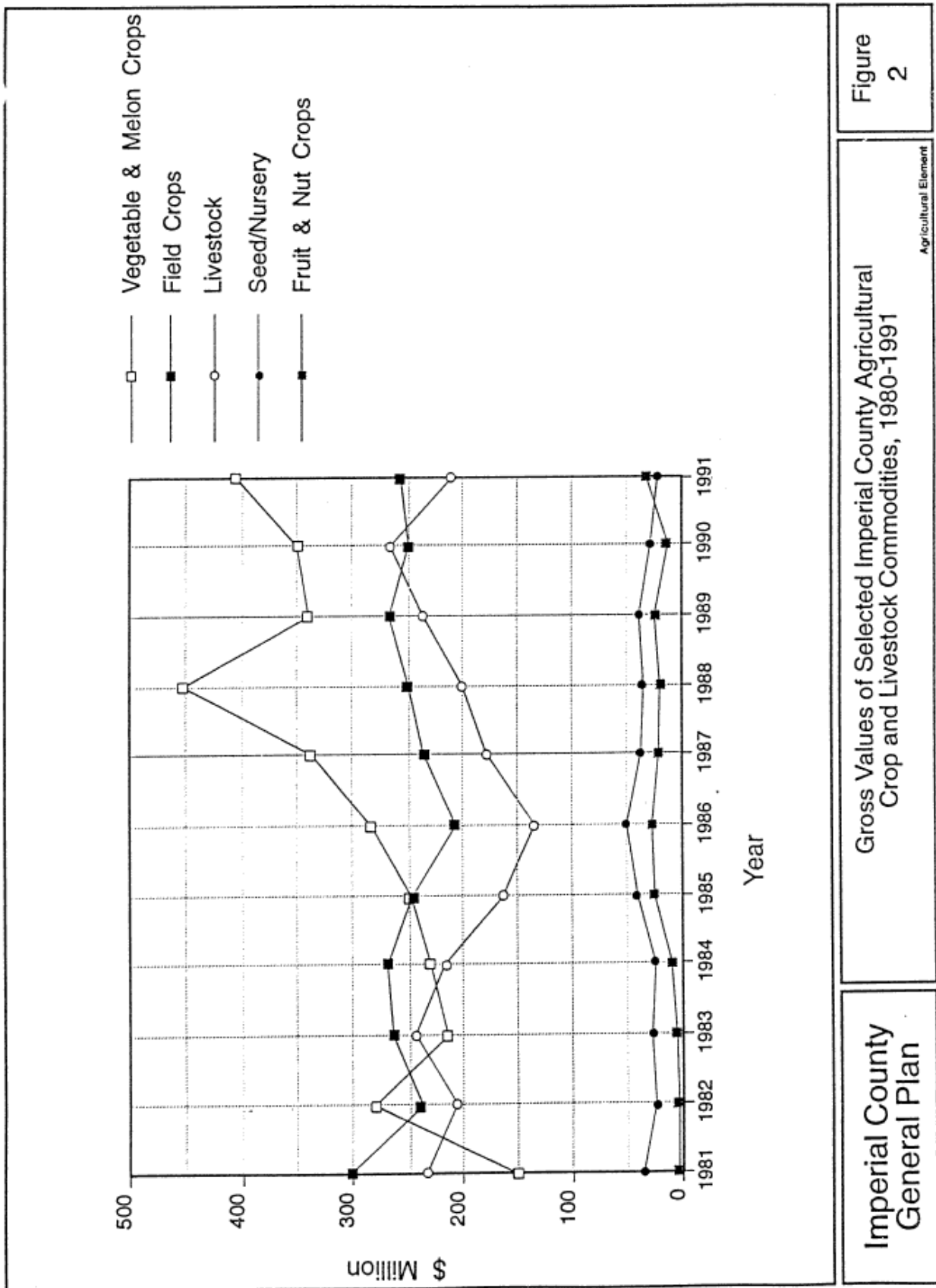


Figure
2

Gross Values of Selected Imperial County Agricultural
Crop and Livestock Commodities, 1980-1991

Agricultural Element

Imperial County
General Plan

TABLE 1
SUMMARY OF IMPERIAL COUNTY AREA HARVESTED AND GROSS INCOME,
BY MAJOR AGRICULTURAL COMMODITY CATEGORY, FOR 1987-1991

Commodity	1991	1990	1989	1988	1987
Vegetable & Melon					
Harvested Acreage	136,119	149,425	136,887	119,064	109,831
Value	\$409,470,000	\$354,868,000	\$399,013,000	\$452,069,000	\$337,853,000
Field Crops					
Harvested Acreage	380,534	371,598	373,250	349,281	345,138
Value	\$254,895,000	\$346,497,000	\$272,114,000	\$250,815,000	\$226,934,000
Livestock					
Value	\$217,696,000	\$264,262,000	\$240,298,000	\$204,061,000	\$177,725,000
Fruit & Nut Crops					
Harvested Acreage	4,433	3,527	4,483	4,371	7,374*
Value	\$35,239,000	\$20,915,000	\$25,483,000	\$28,458,000	\$22,000,000
Seed Crops & Nursery Products					
Harvested Acreage	40,391	41,248	49,293	49,592	47,662
Value	\$32,833,000	\$26,868,000	\$36,968,000	\$33,601,000	\$36,525,000
Apiary Products					
Value	\$2,596,000	\$3,401,000	\$3,565,000	\$4,613,000	\$4,778,000
Total					
Harvested Acreage	561,477	565,798	563,913	522,308	510,005
Value	\$952,729,000	\$1,016,811,000	\$977,441,000	\$973,617,000	\$805,815,000

*included jojoba; moved to field crops in 1988.

Source: Imperial County Agricultural Crop and Livestock Reports

Class IV. Soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V. Soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI. Soils have severe limitations that make them generally unsuitable for cultivation.

Class VII. Soils have very severe limitations that make them unsuitable for cultivation.

Class VIII. Soils and landforms have limitations that nearly preclude their use for commercial crop production.

Although only Class I and II soils are normally considered as prime (Section 51201(c) of the California Government Code), the Open Space Element of the 1973 Plan indicated that Class III soils, which comprise most of the Imperial Valley and about 90% of the irrigated area in Imperial County, have the potential for prime agricultural production, given appropriate climatic and water conditions. For the purposes of this Agricultural Element, the SCS definition of prime agricultural soils continues to be applicable to Class I, II, and III soils. A significant portion of Imperial County is therefore highly suited for agricultural production if adequate quantities of irrigation water are available.

Class II soils are scattered in the northwest, west canal, and southeast portions of the irrigated area; the San Felipe Creek areas; in the vicinity of the Salton Sea Test Base, and the Bard area. While some of these Class II soils are presently not irrigated, they warrant preservation as prime soils. An extensive area of nonirrigated Class III soils is located east of the East Highline Canal. Barring the availability of substantial amounts of irrigation water from a new source, noticeable expansion of irrigated acreage appears unlikely.

Additional details on soil characteristics are provided in the Open Space and Conservation Element. Also, the Soil Conservation Service maintains an office in El Centro with detailed maps depicting the various types and locations of soils found in the County, and should be consulted for more information.

The Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) was implemented in 1982, largely as a result of growing public concern over farmland losses in California. The program is mandated by Government Code Section 65570, Open Space Subventions. For land inventory purposes, categorical definitions of important farmlands were developed by the SCS, recognizing the land's suitability for agricultural production, rather than reflecting only the physical and chemical characteristics of soils.

The first Important Farmland Maps were compiled in 1984 and subsequently updated in 1986, 1988, and 1990. The major purpose of the FMMP is to monitor conversion of the state's agricultural land. The aim of the program is to provide for: 1) an inventory of important farm and grazing lands in the form of Important Farmland Series Maps; 2) an inventory of land locally planned for, and/or committed to, future urban development;

and, 3) biennial revision of the Important Farmland Series maps to identify and report conversion of land to and from agricultural use to the legislature, local government, and the public. Lands mapped in Imperial County coincide with those lands included by the SCS in the soil survey of the Imperial Valley, the Palo Verde, and the Winterhaven-Bard areas.

The Important Farmland Series maps use the eight classification categories summarized below and defined in Appendix A.

Prime Farmland. Land with the best combination of physical and chemical characteristics for the production of crops.

Farmland of Statewide Importance. Land with a good combination of physical and chemical characteristics for the production of crops.

Unique Farmland. Land of lesser quality soils used for the production of the State's leading agricultural cash crops.

Farmland of Local Importance. Nonirrigated and uncultivated land with Prime and Statewide soil mapping units.

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock.

Urban and Built-Up Land. Land occupied by structures or infrastructure to accommodate a building density of at least one unit to one and one-half acres, or approximately six structures to ten acres.

Other Land. Land which does not meet the criteria of any other category.

Land Committed To Nonagricultural Use. Land that may currently be in agriculture but which has been permanently committed by local elected officials to nonagricultural development.

The FMMP regards four of the categories -- prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance -- as "important farmland." Based upon the most recent (1992) FMMP map and report, Imperial County currently has a little less than 560,000 acres of important farmland.

As part of the FMMP, the Department of Conservation produces a Land Conversion Report to accompany each biennially updated Important Farmland Series map. Table 2, adopted from the 1988-1990 Land Conversion Report, summarizes Imperial County land use data for 1988 and 1990. As indicated in Table 2, a total of 559,435 acres were used as agricultural land in 1990, which represented a net loss of 1,395 acres from 1988. Although there was a slight increase in "prime farmland" (165 acres), the other three important farmland categories represented losses (1,560 acres combined).

TABLE 2
IMPERIAL COUNTY LAND USE SUMMARY AND CHANGE FROM 1988 TO 1990

Land Use Category	Total Acreage Inventoried		1988-90 Acreage Changes			
	1988	1990	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
Prime Farmland	214,369	214,534	863	1,028	1,891	165
Farmland of Statewide Importance	318,364	317,757	1,519	912	2,431	-607
Unique Farmland	831	783	48	0	48	-48
Farmland of Local Importance	27,266	26,361	909	4	913	-905
Important Farmland Subtotal	560,830	559,435	3,339	1,944	5,283	-1,395
Grazing Land	0	0	0	0	0	0
Agricultural Land Subtotal	560,830	559,435	3,339	1,944	5,283	-1,395
Urban Build-Up Land	19,219	20,408	0	1,189	1,189	1,189
Other Land	447,744	447,879	1,379	1,514	2,893	135
Water Area	375	446	0	71	71	71
Total Area Inventoried	1,028,168	1,028,168	4,718	4,718	9,436	0

Source: Table C-7, 1992 Farmland Mapping and Program Land Use Conversion Report (Department of Conservation)

It is noteworthy that "Urban and Built-Up Land" increased by 1,189 acres from 1988 to 1990 (Table 2). As indicated in Table 3, which details actual conversions from category to category, 908 acres of the 1,189 acres of new Urban and Built-Up Land came from important farmland (the remaining 281 acres came from "Other Land").

A major agricultural land use issue addressed in this Element is the continued viability of agricultural production and preservation of agricultural land. As noted above, the County Board of Supervisors recognized the potential threats to agricultural productivity posed by increased non-agricultural land uses, and on August 7, 1990 approved the "Right-to-Farm" Ordinance (Ordinance No. 1031; see Appendix B). Upon adoption of this

ordinance, the following "notice", prepared by the Agricultural Commissioner's Office, was mailed to all owners of real property in Imperial County. This notice is also provided to potential purchasers of property in Imperial County, and is attached to all building permits issued for projects that exist on or within 1/4 of a mile of agricultural land:

IMPORTANT NOTICE
FROM THE BOARD OF SUPERVISORS OF IMPERIAL COUNTY
DISCLOSURE REQUIRED BY IMPERIAL COUNTY CODIFIED ORDINANCE
SECTION 62103

RIGHT TO FARM

The County of Imperial permits operation of properly conducted agricultural operations within the County. If the property you are purchasing or own is located near agricultural lands or operations or included within an area zoned for agricultural purposes, you may be subject to inconvenience or discomfort arising from such operations. Such discomfort or inconvenience may include, but are not limited to: noises, odors, light, fumes, dust, smoke, insects, chemicals, operation of machinery (including aircraft) during any 24 hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. One or more of the inconveniences described may occur as a result of any agricultural operation which is in conformance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconvenience or discomfort as a normal and necessary aspect of living in a county with a strong rural character and an active agricultural sector. Imperial County has established a grievance committee to assist in the resolution of any disputes which might arise between residents of this county regarding agricultural operations. If you have any questions concerning this disclosure, please contact the Agricultural Commissioner's Office at 339-4314.

TABLE 3 IMPERIAL COUNTY LAND USE CONVERSIONS FROM 1988 TO 1990										
Land Use Category	Prime Farm land	Farmland of Statewide Importance	Unique Farm land	Farmland of Local Importance	Grazing Land	Total Ag. Land	Urban Built-up Land	Other Land	Water Area	Total Converted to Another Use
Prime Farmland to	0	40	0	0	0	40	154	621	48	863
Farmland of Statewide Importance to:	16	0	0	4	0	20	706	770	23	1,519
Unique Farmland to:	0	0	0	0	0	0	48	0	0	48
Farmland of Local Importance to	266	520	0	0	0	786	0	123	0	909
Grazing Land to:	0	0	0	0	0	0	0	0	0	0
Agricultural Land Subtotal	282	560	0	4	0	846	908	1,514	71	3,339
Urban Build-Up Land to:	0	0	0	0	0	0	0	0	0	0
Other Land to:	746	352	0	0	0	1,098	281	1	0	1,379
Water Area to	0	0	0	0	0	0	0	0	0	0
Total Acreage Converted	1,028	912	0	4	0	1,944	1,189	1,514	71	4,718
Source: Table C-7, 1992 Farmland Mapping and Monitoring Program Land Use Conversion Report (Department of Conservation)										

Although a major intent of this ordinance is to reduce the loss to the County of its agricultural resources, an important, related purpose is to promote a good neighbor policy by advising purchasers and users of adjacent properties about the potential problems and inconveniences associated with agricultural operations. The ordinance also establishes a "County Agricultural Grievance Committee" to settle disputes between agriculturalists and adjacent property owners.

In summary, the USDA Soil Conservation Service and the California Department of Conservation's Farmland Mapping and Monitoring Program have established that the soils currently cultivated in Imperial County are productive and important farmland; the gross annual value of agricultural production has averaged close to one billion dollars over the past few years; and the County has taken a strong position towards maintaining and encouraging agricultural production, as reflected in the "Right-to-Farm" Ordinance.

b. Water Resources

Water for irrigation in Imperial County is diverted from the Colorado River at the Palo Verde Diversion Dam north of Blythe by the Palo Verde Irrigation District, and at Imperial Dam through the All-American Canal headworks and desilting basins by the Imperial Irrigation District (IID) and the Bard Irrigation District for use in the Yuma, Bard, Imperial, and Coachella Valleys. In the Imperial Valley, approximately 2.9 million acre-feet of water is delivered annually to over 500,000 acres of agricultural lands via an elaborate gravity-flow system of about 5,600 water delivery points, 1,675 miles of canals and laterals (more than 1,000 miles of which are concrete-lined) and six regulatory reservoirs. The IID also maintains a 1,457-mile drainage system, which collects surface runoff and subsurface drainage from 32,222 miles of tile drains. For more information on the water transportation system, see the Water Element.

Irrigation is critical for crop production in Imperial County. Most basically, irrigation permits farmers to apply measured amounts of water to particular crops as required. The water delivery system is sophisticated enough such that next-day water orders can normally be accommodated when necessary. Although some crops are affected by salinity, extreme temperatures, and other environmental factors, the existing water delivery system overcomes the lack of precipitation in this otherwise arid region as a significant limiting factor to intensive crop production. Detailed information on the water delivery systems is available from the IID, the Palo Verde Irrigation District, and the Bard Irrigation District.

2. Livestock Production

Livestock production, or animal husbandry, represents the second major form of agricultural production in Imperial County. Livestock production focuses on the production of beef cattle, sheep, wool, dairy products, swine, and, more recently, fish and other aquatic products. Horses are also used for work and pleasure. Imperial County offers many advantages to livestock producers. Locally grown crops provide a variety of feed ingredients for beef cattle, dairy cattle, sheep, and other animals, and adequate supplies of clean, fresh water are available from the water delivery systems described above. Although hot in the summer, the climate is dry and mild in winter, making feeding conditions ideal for cattle and sheep.

As indicated in Table 1, the annual gross income from livestock production in the County ranged between 177 and 264 million dollars from 1977 to 1991, thereby typically representing 20-25% of the total agricultural gross income. Within the general category of livestock production, beef cattle represent the single most important product to date. Indeed, taking into account all agricultural products, cattle has long been the highest ranked million dollar product (surpassed only in 1988 by lettuce as the top performer; see Figure 3 and annual issues of the Imperial County *Agricultural Crop & Livestock Report* by the Agricultural Commissioner).

Cattle production therefore represents a major role in the County's economy by providing income, tax revenue, employment and the purchase of local goods and services. Feed yards use many crops grown by Imperial County farmers including alfalfa, bermuda hay, bermuda straw, oat hay, Sudan grass hay, rye grass hay and wheat straw.

It is noteworthy that alfalfa has typically been the second highest million dollar product in Imperial County; a considerable portion of this field crop is consumed by locally raised livestock. Winter grazing of these crops in recently harvested fields is also important to cattle production and farmers alike, as are sugar beet tops which are grazed by cattle from April to July. Several crop culls including melons and carrots are also fed to cattle, and locally produced beet pulp and molasses are used in feedyards; lower quality roughages that do not meet nutrient requirements for dairy cattle or retail markets are suitable for use in feedyard rations. In addition, wheat and other locally grown grains are sold to cattle feeders when export or domestic markets are unfavorable, giving the farmers an alternative market for these crops.

Dairy cattle also represent a significant agricultural product in Imperial County, although the number of dairies has declined recently. Sheep are an important commodity, particularly in the winter when other regions throughout the West are unsuitably cold. The value of sheep was 7.3 million dollars in both 1985 and 1991, although it sunk to a low of 4.7 million dollars in 1986.

Aquaculture, which involves the controlled growing of phytoplankton, zooplankton, aquatic invertebrates, as well as "higher" aquatic plants and animals in marine, brackish, or fresh water, has increased rapidly over the past decade as a significant form of agriculture in Imperial County. Aquaculture products include fish, especially, and also fiber, pharmaceuticals, and chemicals. Aquaculture uses a variety of systems including ponds, raceways, silos, circular tanks, cages, and recirculating systems to grow fish, plants and animals.

Aquaculture is attracted to Imperial County because of a long growing season made possible by bright sunshine and cloudless days, and the abundant water supply offered by the Colorado River. Also available are heavy clay soils for pond construction, compatible uses of adjoining lands, relatively low cost flat land, relatively low cost electricity, and direct heat use of the County's geothermal resources. The proximity of this area to Los Angeles County, Orange County, and San Diego County markets is an additional advantage in locating here. Although not currently exploited, two other important resources may, in the future, prove attractive for aquaculturalists: water from the Salton Sea (although this may be limited due to the current high levels of salts and toxic elements) and carbon dioxide trapped in groundwater.

Figure 3 - Selected Million Dollar Crops

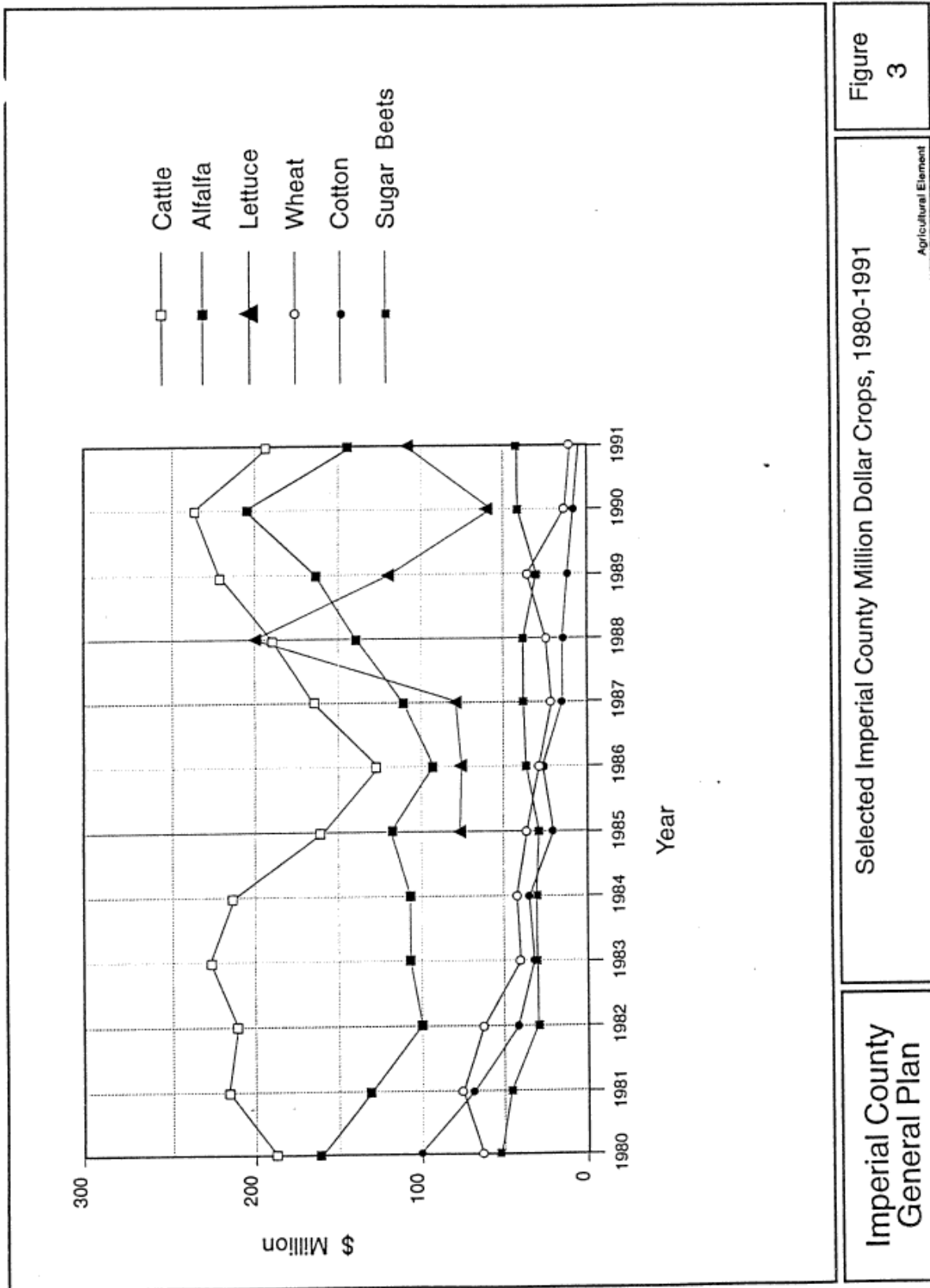


Figure
3

Selected Imperial County Million Dollar Crops, 1980-1991

Agricultural Element

Imperial County
General Plan

Aquatic products in Imperial County had a gross annual value of 8.6 million dollars in 1991, representing a steady increase in gross income from 2.6 million dollars in 1985. According to a report published by the Economic Research Service of USDA, aquaculture is the fastest growing segment of the overall agriculture industry.

High population areas in Southern California, Baja California and Arizona give livestock producers in Imperial County a market unmatched in other areas in the country; and rail access to the Port of Los Angeles provides convenient access to international markets.

D. Trends and Issues

Several important trends and/or issues related to future agricultural production in Imperial County have developed recently and are addressed in this Agricultural Element. These trends and issues may be summarized as follows:

- The loss of important farmland to urban and other uses.
- An increase in "leapfrogging" or "checkerboard" patterns of residential and other development on agricultural land outside of existing urban boundaries.
- The increased difficulty of cultivating crops and raising livestock in areas experiencing urban development or population increases.
- Water conservation and transfer programs and the future availability of adequate quantities of irrigation water.
- Agricultural production and salinity/selenium levels in the Salton Sea.
- Environmental issues related to the runoff of agricultural chemicals and toxic elements in drainage water.
- Increased regulation on agricultural operations.
- A lack of understanding by the general public of importance of agricultural production and operations.
- A need for balancing renewable energy development and continued agricultural operations.
- The need for increased local agricultural packaging/processing activities.
- Infestation by the Sweet Potato Whitefly Strain B (Silverleaf).
- Decline of the cattle and dairy industries.
- Special needs and difficulties of the aquaculture industry.

These trends and issues are reviewed below, and establish the context for presentation of the Goals and Objectives in following chapter.

Loss of Important Farmland to Urban and Other Uses

As indicated in the Land Use Element, the estimated total population for Imperial County increased from 109,303 in 1990 to 117,421 in 1992. Projections of population and household numbers by the Southern California Association of Governments (SCAG) in 1992 estimated that Imperial County will have 140,100 people (and an additional 5,110 households) in year 1999. These projections by SCAG may prove to be low, however, in view of several factors including the rapid population growth that the County appears to be experiencing, the relative affordability of local housing, completion of the new prisons, the proposed new border crossing, and the proposed North American Free Trade Agreement. In 1991, the State Department of Finance had estimated the year 2000 population would range from approximately 143,400 to 184,700, with the "most likely" projection being 164,115.

It must be recognized that the County's population may increase significantly over the next decade or two. New households will need places to live and cities and unincorporated areas will need to grow. These observations are relevant to future agricultural production since, with few exceptions, virtually all land surrounding cities and unincorporated communities is important farmland. More specifically, most land that surrounds existing urban uses is "Prime Farmland" or "Farmland of Statewide Importance", as defined by the California State Department of Conservation. Indeed, these two important categories comprise approximately 95% of all agricultural land in the County.

Recognizing that population growth will occur, it is obvious that there will be some net losses of existing important farmland. Important agricultural lands are already under extreme pressure for urbanization in several areas, particularly in the vicinities of El Centro, Imperial, and Calexico. Since the County's economy has historically been dependent upon agricultural production, and this dependency will exist in the foreseeable future, the permanent conversion of significant amounts of important farmland to non-agricultural uses will negatively impact the local economy and the County's ability to provide important agricultural products to the nation and elsewhere.

Leapfrogging Patterns of Non-Agricultural Developments in Agricultural Areas

Leapfrogging or "checkerboard" patterns of development occur when new subdivisions and other land uses are constructed in the midst of agricultural land near a city or rural community. Agricultural fields typically become bounded by new residential or urban land uses, and often become isolated as they are cut off from existing farmland. This isolation or stranding of fields leads to several major problems relating to agricultural operations including irrigation, the application of pesticides and other chemicals by aerial spraying and other means, and access by tractors, trucks and other farm equipment. Eventually, these fields become too small or circumscribed by other land uses to be economically or conveniently farmed.

Leapfrogging has increased in the past few years and is a major concern of farmers. Agricultural uses of the type practiced in Imperial County, as opposed to "gentry farming" common in other Southern California communities, are not compatible with residential uses. When a leapfrog residential development is allowed to occur, this inherent incompatibility creates land use conflicts on all four sides of the new development.

Inevitably, farming loses out and residential expands to create new boundaries of conflict.

During interviews conducted for the preparation of this Element, farmers, agricultural advisors, and others from the agricultural community invariably identified leapfrogging as a significant recent trend and major threat to agricultural production. Statements such as "keep the houses near the towns," "don't let people just develop houses or whatever in the middle of agricultural areas," and "growth should happen in an organized way, like spreading out around existing towns," are standard opinions. The consensus is that leapfrogging disrupts agricultural operations and reduces agricultural productivity significantly more than would be the case by expanding out from existing non-agricultural uses.

Difficulty of Cultivating Crops and Raising Livestock Near Urban Development

Any new growth beyond existing urban limits, especially including leapfrogging developments, but also well-planned expansions at the boundaries of existing urban limits, introduces new land use conflicts. Normal agricultural operations are disrupted where non-agricultural land uses extend into or alongside areas that previously were entirely agricultural. Aerial spraying, for example, is a standard and efficient pest control practice for the production of many crops in Imperial County. Interruptions or restrictions of this practice, alone, threaten the economic viability of producing certain crops.

As another example of land use incompatibility, new developments commonly impact well-established irrigation practices by requiring that farmers construct new canals to route water around such developments and to create new drainage systems. Since the irrigation and drainage of farmland is based entirely on gravity flow, any new development in existing agricultural land poses potential difficulties for farming adjacent farmland, particularly on the downstream side.

Another important difficulty imposed upon farmers by increased development is the transportation of farm equipment. Most farmers in Imperial County cultivate fields in different locations, and must move various tractors, planters, cultivators, harvesters, landplanes, and other equipment, most of which is oversized, from area to area within the County. With increased growth, and particularly with increased linear development between existing urban uses, the transportation of machinery has become increasingly difficult and dangerous.

From another perspective, increased growth leads to increased nuisance complaints about farm and livestock production operations. The inhabitants of new subdivisions, in particular, are often from non-agricultural areas and not accustomed to the activities, sounds, dust, night lights, and odors associated with farmland, feedlots, dairies, and other agricultural operations.

The establishment of "buffer zones" between agricultural and urban areas would reduce much of the incompatibility between these land uses. The use of buffer zones to date, however, has not been common or especially effective. The buffer zones that exist often become overgrown with weeds, which attract various insects and other pests, or depositories for trash, making them aesthetically unpleasing.

The recently adopted Right-To-Farm Ordinance (Appendix B) goes far towards protecting the ability of agriculturalists to perform normal farm and livestock operations. By supporting agriculturalists and clarifying the circumstances under which agricultural operations may be considered a nuisance, this ordinance should help reduce losses to the County of its agricultural resources. Nevertheless, it is likely that future "nuisance" complaints and other difficulties of farming and raising livestock related to urbanization will force or encourage some agriculturalists to cease or curtail their operations. Such actions may discourage investments in farm improvements to the detriment of the County's agricultural industry as a whole.

Water Conservation and Water Transfer Programs

As described previously, the IID provides approximately 2.6 million acre-feet of water to Imperial County each year, and other districts provide water to irrigate some 24,000 acres in the Bard and Palo Verde Valleys. Approximately 98% of the water delivered to the County is for irrigation. Considering that the Metropolitan Water District of Southern California (MWD) supplies about 2.6 million acre-feet of water each year to some 15 million people in 27 member agencies stretching from San Diego to Ventura, water conservation in Imperial County has become a critical issue. The issue has intensified in view of California's sixth consecutive year of drought and increased demands of Colorado River water from Arizona and Nevada.

Under a Water Conservation Agreement between IID and MWD reached in December 1989, MWD is financing the construction, operation, and maintenance of selected conservation projects at a cost of \$233 million, and in exchange can divert additional water from the Colorado River for delivery to its service area, equivalent to the amount conserved by IID. The 35-year contract between the districts commenced in 1990 and calls for construction to be completed in 1995. The program calls for 18 structural and non-structural conservation projects which can be grouped into seven categories: canal concrete lining, regulatory reservoirs, 12-hour deliveries, non-leak gates, system automation, lateral interceptors, and on-farm irrigation water management. By the end of 1991, an estimated 33,929 acre-feet of water was being conserved annually; the entire program is expected to conserve 106,110 acre-feet of water annually by 1994 in the County, and make it available for use by the MWD.

Water conservation measures that have the most potential to directly affect agricultural production are the on-farm irrigation projects. These proposed on-farm projects include the installation of tailwater pumpback and drip systems, farmer training of new irrigation techniques, reduction of alfalfa irrigation, and voluntary land fallowing. The proposed modified alfalfa irrigation program may involve non-irrigation for 75 consecutive days with incentives paid to participants. A voluntary land fallowing program involving subsidies may also be made available to farmers.

Many farmers currently find these irrigation reduction programs attractive, considering especially the facts that alfalfa prices are low and alfalfa damage by the whitefly is high. Whitefly damage, alone, has recently encouraged most farmers to dry out their alfalfa fields. It must be noted that although the agricultural community supported the IID/MWD water conservation/transfer program, many farmers are concerned that the initiation of irrigation reduction projects may lead to trends or policies that restrict the future availability of water for alfalfa and other crops. Non-voluntary irrigation reduction policies would be regarded as a potential threat to long-term agricultural production and the

County's economy. The County is extremely concerned over the incremental effects of some of the programs initiated by IID and beyond authority of the County Board of Supervisors.

Agricultural Production and Salinity/Selenium Runoff

Colorado River water is naturally somewhat saline, as are the soils that were deposited in Imperial Valley by thousands of years of periodic flooding. Since the flood of the Colorado River in 1905-1906, the Sea has been sustained by agricultural drainage from the Imperial, Coachella, and Mexicali Valleys, as well as from rainfall, storm runoff from the surrounding mountains, and groundwater inflow.

Agricultural production was adversely affected by high salt levels in the first half of the 1900s. This hazard has been overcome by the installation of subsurface tile drains. To date, about 32,222 miles of tile drains have been installed and drain most irrigated land in Imperial Valley. The drainage system has reduced previously existing soil salinity levels and prevents salt accumulation in farmland from irrigation water. A consequence of tile drains, however, is that, since 1949 more salt has been carried by drainage water to the Salton Sea than has been brought in by irrigation water.

Because the Salton Sea is a terminal sea, with no outlet except for evaporation, all salts that drain from agricultural lands of the lower Colorado River and Mexico are deposited there. A result of being a terminus for Colorado River water is that approximately five million tons of salt per year are carried into the Salton Sea. The high evaporation rate of the desert climate removes water from the Sea each year, but leaves the salt behind to become more and more concentrated. The salinity level of the Salton Sea is currently more than 43,000 ppm, which exceeds the salinity of ocean water (about 35,000 ppm), and the Salton Sea's sportfishing industry is threatened by rising salinity levels.

Another problem facing the Salton Sea is that of selenium. Studies have shown that the selenium entering the Sea is originally from the Colorado River, which contains approximately one to two parts per billion (ppb) of selenium. As water passes through Imperial Valley, the selenium becomes concentrated due to the evapotranspiration that occurs during irrigation. The agricultural drains then carry this selenium-enriched water into the Salton Sea where it is taken up and concentrated by small organisms, which in turn are eaten by larger organisms. This process increases selenium concentrations. Fish in the Salton Sea have an average concentration of approximately ten ppb. Birds that feed off these fish have tissue levels of up to 40 ppb. This has a potential to cause health problems in birds.

Environmental concerns related to increased salinity and selenium levels of the Salton Sea have implications for future agricultural production practices. While irrigation water contributes additional salt and selenium to the Sea, the drainage water also prevents the Sea's existing levels of these substances from becoming even more concentrated by providing dilution. The solution to increased salinity and selenium levels is not simply to reduce irrigation water, since this would actually be accompanied by a rise in salinity and selenium concentrations. Nevertheless, it behooves the agricultural community to remain sensitive to and cooperate with environmental efforts to stabilize salinity and selenium of the Salton Sea.

Agricultural Chemicals and Environmental Issues

Similar to the problems of high salinity and selenium levels of drainage water, several water quality and environmental issues are related to the runoff of agricultural chemicals. The intensive agricultural production of Imperial County necessarily results in the introduction of agricultural chemicals from pesticides and fertilizers into downstream waters. Studies performed by the California Regional Water Quality Control Board and the U.S. Geological Survey indicate that drainage water in the Imperial Valley contains pesticides in quantities that often exceed the Environmental Protection Agency's criteria for protection of fish and wildlife. The concentration levels of these chemicals in the fish and birds of the agricultural drains and the New and Alamo Rivers are higher than the levels found in Salton Sea fish and wildlife by several factors; this problem is currently being studied by the U.S. Department of Fish and Wildlife. It must be noted that a considerable portion of the pesticide and other contamination of New and Alamo Rivers and Salton Sea comes from irrigation drainage, industrial, and municipal waste discharges in Mexico.

The agricultural community needs to be concerned with environmental issues related to downstream water quality. The implementation of Integrated Pest Management (IPM) policies and programs that focus on long-term prevention or suppression of pest problems with minimum impact on human health, the environment, and nontarget organisms would go far towards reducing the environmental problems associated with pesticides and other toxic chemicals.

Regulations on Agricultural Operations

A significant trend over the last few decades has been increased regulation on agricultural operations. Environmental, safety, and other restrictions on pesticide and fertilizer use, pest management, feedlot and dairy wastes, irrigation water and runoff drainage, aerial spraying, crop residue burning, slow-moving farm vehicles and operators' licenses, and other activities have made farming and livestock production extremely complex and arduous.

Although many such regulations are necessary for the long-term well-being of our health and environment, many farmers and cattle producers feel they are being regulated out of existence. Considerable time and effort is currently spent obtaining various non-land use related permits and licenses and meeting other regulatory obligations. In view of the many concerns relating to the use of chemicals, drainage water quality and the Salton Sea, increased population and traffic in the County, etc., more regulations will likely be implemented. Many potential constraints of farming activities deemed to be nuisances by nonfarm residents in rural areas, have likely been avoided by adoption of the Right-To-Farm Ordinance; but it is clear that strict new Federal, State, or County regulations could threaten the viability of agricultural production in Imperial County.

The agricultural community needs to anticipate and take the lead on environmental protections before governments do it for them. For instance, the increased adoption of Integrated Pest Management for pest control would go far towards simultaneously reducing environmental impacts and fending off new regulations. At the same time, agricultural researchers must continue to focus on the development of other ecologically-sound agricultural practices for Imperial County, and the various levels of government must balance the approval of new regulations with the ability of farmers, cattlemen, and other agriculturalists to stay in business.

Agricultural Operations and the General Public

As the population of Imperial County has increased, the overall general public's understanding of the importance of agricultural production and operations has declined. More urban dwellers mean a widened communication gap between agriculturalists and non-agricultural consumers. Whereas long-time County residents understand or are accustomed to the odors, dust, noises, insects, and other conditions of living in an agricultural community, many new residents feel no loyalty to agriculture and simply find agricultural operations to be annoying. As the County's population increases in the future, this lack of education on the part of the general population about agricultural operations could lead to political implications detrimental to the agricultural industry, despite the adoption of policies such as the Right-To-Farm Ordinance.

The general public therefore needs information about the importance of agricultural operations. Public attitudes about the use of pesticides, the use of large quantities of water for irrigation, the economic benefits of raising cattle, the need to transport oversized machinery, and other concerns can be improved through education. The general public needs to appreciate what goes into putting food on the table, and needs to understand that the County's entire economy depends on agriculture. Some education in the County is occurring, such as the Farm Bureau's "Ag in the Classroom" program, but the local agricultural community needs to intensify such efforts. Several other counties in California, as well as the states of Arizona and Nevada, have established educational programs that would serve as excellent models for Imperial County.

The North American Free Trade Agreement

The proposed North American Free Trade Agreement (NAFTA) holds important production and economic implications for Imperial County agriculturalists, although most such implications are still poorly understood. The opinions of County farmers, researchers and others of the agricultural community about NAFTA are presently varied but generally positive and leaning towards cautious optimism. If NAFTA is approved by the U.S., Mexico, and Canada, the pact will eliminate trade barriers and topple political hurdles in creating the world's largest trading bloc worth \$6 trillion.

USDA economists are analyzing the expected effects of NAFTA on a commodity by commodity basis. Agricultural products anticipated to improve for Imperial County growers include meat and dairy products, wheat, cotton, and nuts; other products expected to be exported to Mexico include sweet corn, green beans, rice, tomato paste, and frozen asparagus. Crops that may be imported from Mexico in greater amounts, and which may increase competition for local growers, include melons, fresh tomatoes, bell peppers, cucumbers, fresh and frozen broccoli, and asparagus. Imperial County can remain competitive in the arena of vegetable and fruit production if these imported products are required to meet the same California State minimum quality standards that County-grown produce must meet.

The profitability of producing certain commodities will improve under NAFTA, and will decline for others. The advantages and disadvantages of growing specific crops will continue to evolve well after NAFTA is adopted, as production costs increase or decrease for Imperial County farmers, and as Mexican incomes and purchasing power

for U.S. products increase. It is essential that the short- and long-term economic implications of NAFTA be analyzed and, to the extent possible, predicted in order that local agriculturalists be well-positioned to appropriately adapt their production strategies.

Agricultural Packaging and Processing

The packaging and processing of agricultural products in Imperial County have declined in many ways since the 1950s, and yet these activities potentially represent highly valuable enterprises. The need for a more diversified economic base is reflected in the County's attempt to attract industries, such as General Dynamics, and the establishment of proposed industrial and commercial Specific Plan Areas (SPAs) such as the Mesquite Lake SPA, East Border Crossing SPA, and the I-8 and Highway 111 SPA (see Land Use Element).

Because Imperial County produces over 120 crops, of which dozens are multi-million dollar products, the potential benefits of developing agricultural packaging and processing operations are immense. Local packaging and processing operations would stabilize and increase the value of farm products; increase local employment; diversify the overall agricultural industry and thereby stabilize the local economy; and lower the prices of many locally produced commodities for local consumption.

Holly Sugar manufactures sugar from locally-raised sugar beets and is one of few agricultural processors in the County that could serve as a model for other commodities. Holly Sugar contracts with farmers to grow sugar beets, on about 40,000 acres, which are purchased by the factory at a stable price. The guaranteed purchase of sugar beets by this plant at a market price adds considerable security to the production of this crop that would not be possible otherwise. The Holly Sugar plant also employs over 325 people from April through August and approximately 100 individuals during the remainder of the year, and contributes revenue to the County's economy.

Products that may be immediately amenable to advanced packaging and processing steps include carrots, tomatoes, cole crops, onions, Bermuda grass seed, and citrus, to name a few. At present, most carrots are harvested, topped, washed, and exported out of the County in large trucks to be packaged elsewhere for the retail market. Local packaging of carrots would increase the value of this product; the production of carrot juice and other carrot products would increase this crop's value even further.

Similarly, local tomato processors could can, dry, and juice tomatoes, and thereby contribute benefits to the local economy, as could citrus juice plants, onion processing plants, seed mills, and a variety of fresh and frozen vegetable packaging operations. Research and marketing studies would likely identify several commodities that, if packaged and processed locally, would contribute to the benefits described above.

White Fly Infestation

The County is currently contending with a natural disaster in the form of the Sweet Potato Whitefly Strain B (Silverleaf). In 1991, the whitefly wiped out 99% of Imperial Valley's fall melon crop, and inflicted severe damage to the winter vegetables including lettuce, broccoli, and cauliflower. Alfalfa was also severely damaged. In all, Imperial Valley growers suffered an estimated \$130 million crop damage between May 1991 and May 1992, about 2,500 farmworkers were forced into unemployment, and local businesses felt the sting of economic hardship. In November 1991, Governor Pete Wilson proclaimed a state of emergency in Imperial and Riverside Counties to assist farmers and researchers in finding a solution to the devastating pest.

The Imperial County Whitefly Management Committee was established in September 1991 to determine goals and coordinate research efforts to help eradicate this insect. The committee coordinates the efforts of the County Agricultural Commissioner, local farmers, IID, Palo Verde Irrigation District, Coachella Valley Water District, University of California Cooperative Agricultural Extension, United States Department of Agriculture, and other agencies. An aggressive funding effort has been undertaken to provide operating capital and research funds. Research efforts to date have focused on plant management techniques and other agricultural practices (e.g., shortened alfalfa cutting cycles and summer drying, delayed early plantings of alfalfa, sugar beets, and winter vegetables, etc.), biological controls, and pesticide and fertilizer effects. Continued research funding is critical to combat this and other agricultural pests.

Decline of the Cattle and Dairy Industries

A significant trend has been a decline of cattle feeding from a peak of 450,000 animals in the early 1970's to about 200,000 in 1992, contributing a negative impact on the local agricultural economy. The major reasons for this decline include increased marketing costs, competition from other regions, and State regulations. These trends may be summarized as follows.

Marketing. New beef processing and packaging techniques have led to increased costs of these operations in California and a decline in processing facilities. No beef packers currently remain in Imperial County, and the number of major packers in the southern California and Arizona region has declined from more than 20 in the 1960s and 1970s to only four at present. Some finished cattle are transported to more distant areas for processing, but this option entails additional marketing costs. It is noteworthy that

Mexico is becoming an important market for local cattle, and a potential exists for new, modern processing facilities being developed in Mexico that would not be feasible in California.

Competitiveness. Although the price of alfalfa is currently low, the cost of feed in Imperial County in recent years has been high compared with the cattle industry of the High Plains. One consequence of this is that Imperial County cattle yards focus on raising calves, since calves are best raised in feedyard designs. While this practice helps keep local occupancy up, the profitability is not as high as raising yearlings until finished. Furthermore, light crossbred calves (e.g., Hereford/Brahman, Angus/Brahman, etc.), which gain weight fast, have become limited in availability to Imperial County and thus more costly to purchase. As a consequence, relatively more Holstein calves are raised now than 15 years ago. Holstein calves are cheaper to purchase but gain weight relatively slowly and command lower market prices when sold as heifers or steers.

California Business Environment. Increased regulations, increased requirements for permits and licenses, and increased costs such as labor, worker's compensation insurance, energy, taxes, and user fees have made it more difficult and less productive to raise cattle in California compared with other regions. Several products that are prohibited or restricted in California, such as cotton foodstuffs and parasitical compounds, are available in other areas such as Arizona, often resulting in lower production costs out of the State. Permitting processes for building and/or additions in California are more onerous than in most other states; air pollution standards have led to higher dust control expenses; a higher population in the County has added to dust and odor control difficulties, especially for those operating close to urban areas; and increased traffic has made the herding of pasture cattle more difficult. Finally, livestock producers face legislation on animal welfare that can be devastating.

It is noteworthy that any additional decline of the cattle industry in Imperial County would further exacerbate the viability of alfalfa, which currently is produced on approximately 37% of all County agricultural land. Alfalfa is already experiencing low prices and high transportation costs, largely due to the need to ship a major portion out of the County.

If the above obstacles could be overcome, Imperial County has the land, labor, climate, technology, and other resources for attracting and developing profitable cattle and dairy operations (see Dairy Expansion Committee of Imperial County report, *Desert Dairying in the Imperial Valley*). These operations would have a side benefit of improving and stabilizing the local alfalfa industry.

Special Needs and Difficulties of the Aquaculture Industry

Aquaculture facilities impound water and grow aquatic plants and animals under intensive and very controlled conditions. Some facilities are most efficiently or economically operated as integrated production, processing and warehouse operations. As noted previously, Imperial County aquaculture production and sales have recently increased to the extent that this is one of the fastest growing industries in the County. Growth of the industry has also resulted in the identification of several special requirements and difficulties.

As with any new industry, the availability of financing to develop and expand aquatic operations is often critical to aquaculturalists. Aquaculturalists need freedom to develop

their private resources and to expand and modify their operations as needed. Financing by agencies such as the Federal Land Bank, Production Credit Association, and Farmers Home Administration also needs to be facilitated. These agencies are empowered to make aquaculture loans, but have been reluctant to do so in Imperial County due to unfamiliarity with the industry and the perception that it lies outside of mainstream agriculture.

Aquaculturalists also need the capability to select facility designs, materials, and construction methods best suited for production sites and for culturing organisms. Because aquaculture operations require 24 hours-a-day monitoring and cultivation activities, on-site housing is often needed for employees and their families.

Potential problems exist with water impoundment. If water is ponded on land that has a high filtration rate, seepage may raise the water table on surrounding properties. However, legal remedies are available to neighboring landowners to force sealing of the leak or abandonment of the pond. New water facilities also contribute to the risk of drowning. But the exposure to drowning at aquaculture facilities will remain quite small compared with the numerous other water impoundments in the County such as canals and lakes.

Fish are often perceived as having a bad odor. Bad odor is not an inherent quality of fish or of aquaculture facilities, but result from poor water quality and improper operations. The continued availability of clean, fresh water and the proper management of cultivation facilities will ensure the successful and sanitary production of high quality products desired by the marketplace.

Aquatic organisms are very sensitive to certain pesticides. Pesticides carried to aquaculture facilities by canal water or that drift from aerial spraying may threaten cultured aquatic organisms. The agricultural community needs to be aware of this problem and assist, through education programs, in avoiding potential conflicts.

Mosquitoes and other aquatic insects are often perceived by the public as a problem associated with aquaculture facilities. This is seldom a problem, however, since fish and water movement tend to control mosquito larvae. If problems arise, they are usually associated with water in drainage ditches or seepage containment structures. Insects can be controlled in these waters by stocking fish that eat mosquito larvae or by adding chemicals to the water. Aquaculture facilities may therefore require the use of pesticides, drugs, or chemicals, but they generally use less than other agricultural endeavors.

Aquaculture facilities attract waterfowl and other wildlife, most of which are welcomed. Fish-eating birds are an exception; they transmit fish diseases in addition to eating and damaging fish. The depredation problem of migratory waterfowl has increased in recent years and is unlikely to change significantly in the near future. The problem of depredating wildlife is not unique to aquaculture; similar problems are experienced by farmers, ranchers, and pet owners. The Department of Fish and Game regulations permit farmers and ranchers to harass and drive away wildlife that damage crops. In cases where harassment is unsuccessful and exclusionary devices are impractical, Federal regulations provide for the issuance of permits by the U.S. Fish and Wildlife Service to take depredating migratory waterfowl. Many public agencies and private

companies are conducting research into better ways to solve the problem of depredating wildlife.

III. GOALS AND OBJECTIVES

A. Preface

The Agricultural Element of the General Plan serves as the primary policy statement by the Board of Supervisors for implementing development policies for agricultural land use in Imperial County. This Chapter of the Agricultural Element presents Imperial County's Goals and Objectives relative to agricultural production within the unincorporated areas of the County. Some Goals and Objectives have been taken from other Elements of the previous General Plan (i.e., Land Use, Housing, and Open Space/Conservation) that relate to agriculture. Several new Goals and Objectives have been added based upon existing conditions of the industry and the many important trends and issues described in Chapter II.

The Goals and Objectives, together with the Implementation Programs and Policies in Chapter IV, are the statements that shall provide direction for private development as well as government actions and programs. Imperial County's Goals and Objectives are intended to serve as long-term principles and policy statements representing ideals which have been determined by the citizens as being desirable and deserving of community time and resources to achieve. The Goals and Objectives, therefore, are important guidelines for agricultural land use decision making. It is recognized, however, that other social, economic, environmental, and legal considerations are involved in land use decisions and that these Goals and Objectives, and those of the other General Plan Elements, should be used as guidelines but not doctrines.

B. Goals and Objectives

Preservation of Important Farmland

Goal 1: All Important Farmland, including the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, as defined by Federal and State agencies, should be reserved for agricultural uses.

Objective 1.1 Maintain existing agricultural land uses outside of urbanizing areas and allow only those land uses in agricultural areas that are compatible with agricultural activities.

Objective 1.2 Encourage the continuation of irrigation agriculture on Important Farmland.

Objective 1.3 Conserve Important Farmland for continued farm related (non-urban) use and development while ensuring its proper management and use.

Objective 1.4 Discourage the location of development adjacent to productive agricultural lands.

Objective 1.5 Direct development to less valuable farmland (i.e., Unique Farmland and Farmland of Local Importance rather than Prime Farmland or Farmland of Statewide Importance) when conversion of agricultural land is justified.

Objective 1.6 Recognize and preserve unincorporated areas of the County, outside of city sphere of influence areas, for irrigation agriculture, livestock production, aquaculture, and other special uses.

Objective 1.7 Provide policies and/or incentives for continued use of farmland located just beyond the urban boundaries to ensure the stability that enables farmers to invest and reinvest in agricultural production on their land.

Objective 1.8 Allow conversion of agricultural land to non-agricultural uses including renewable energy only where a clear and immediate need can be demonstrated, based on economic benefits, population projections and lack of other available land (including land within incorporated cities) for such non-agricultural uses. Such conversion shall also be allowed only where such uses have been identified for non-agricultural use in a city general plan or the County General Plan, and are supported by a study to show a lack of alternative sites.

Objective 1.9 Preserve major areas of Class II and III soils which are currently nonirrigated but which offer significant potential when water is made available.

Objective 1.10 Hazard-prone areas such as earthquake faults and aircraft impact zones should remain designated for agricultural uses.

Objective 1.11 Control and prevent soil erosion when possible.

Objective 1.12 Support conversion of State and Federal lands suitable for irrigation agriculture to private ownership and into agricultural production.

Development Patterns and Locations on Agricultural Land

Goal 2: Adopt policies that prohibit "leapfrogging" or "checkerboard" patterns of non-agricultural development in agricultural areas and confine future urbanization to adopted Sphere of Influence areas.

Objective 2.1 Do not allow the placement of new non-agricultural land uses such that agricultural fields or parcels become isolated or more difficult to economically and conveniently farm.

Objective 2.2 Encourage the infilling of development in urban areas as an alternative to expanding urban boundaries.

Objective 2.3 Maintain agricultural lands in parcel size configurations that help assure that viable farming units are retained.

Objective 2.4 Discourage the parcelization of large holdings.

Objective 2.5 Merge or revert to acreage substandard lots in "paper subdivisions" under the same ownership and not being used as separate parcels. Such merging should be done only for agricultural reasons, not to facilitate residential development.

Objective 2.6 Discourage the development of new residential or other non-agricultural areas outside of city "spheres of influence" unless designated for non-agricultural use on the County General Plan, or for necessary public facilities.

Objective 2.7 Allow agricultural employee housing on Important Farmland for permanent and seasonal employees and their families where it promotes efficiency in farming operations and has a minimal impact on agricultural production.

Agricultural and Non-Agricultural Land Use Relations

Goal 3: Limit the introduction of conflicting uses into farming areas, including residential development of existing parcels which may create the potential for conflict with continued agricultural use of adjacent property.

Objective 3.1 The primary use of any parcel designated "Agriculture" on the Land Use Plan shall be agricultural production. Residential uses in such areas must recognize that this primary use of the land may create nuisances such as flies, odors, dust, noise, night light, and chemical spraying.

Objective 3.2 Enforce the provisions of the Imperial County Right-to-Farm Ordinance (No. 1031).

Objective 3.3 Enforce the provisions of the State nuisance law (California Code Sub-Section 3482).

Objective 3.4 Maintain for the benefit of agricultural transportation use, routes which are essential to facilitate the transportation of farm products and oversized farm equipment through agricultural and non-agricultural areas. Continue to allow the driving of farm animals along rural transportation routes.

Objective 3.4a Identify busy agricultural roads to create special crossings for farm equipment.

Objective 3.5 As a general rule, utilize transitional land uses around urban areas as buffers from agricultural uses. Such buffers may include rural residential uses, industrial uses, recreation areas, roads, canals, and open space areas.

Objective 3.6 Where a development permit is sought adjacent to agricultural land use, protect agricultural operations by requiring appropriate buffer zones between agricultural land and new developments, and then keep these zones aesthetically pleasing and free of pests by cleaning them of all garbage and noxious vegetation. Vegetation for the purpose of dust control shall be planted and maintained in an attractive manner. The buffer shall occur on the parcel for which the development permit is sought and shall favor protection of the maximum amount of farmland.

Objective 3.7 Land use decisions regarding property contiguous to agricultural operations shall give consideration to creation of large parcel sizes to minimize conflicts with such operations.

Objective 3.8 Renewable energy projects will be allowed within the RE Overlay Zone and mitigation for agricultural impacts have been identified and addressed.

Water Availability and Conservation

Goal 4: Maximize the inherent productivity of Imperial County's agricultural resources by ensuring future availability of adequate and affordable irrigation water and by managing water such that it is used effectively and not wasted.

Objective 4.1 The County must favor efforts to ensure adequate irrigation water for agricultural areas.

Objective 4.2 Coordinate with the appropriate agencies for the availability of water to meet future agricultural needs.

Objective 4.3 The County will participate and encourage multi-agency participation in water projects where such coordination can improve the likelihood of maintaining an adequate long-term supply of irrigation water throughout the County.

Objective 4.4 Protest any development of non-voluntary water conservation legislation, which would risk removing land from production and impacting the local economy.

Objective 4.5 Encourage farmers to use irrigation methods that conserve water.

Objective 4.6 The County should participate with cities and districts to establish programs for the agricultural re-use of treated wastewater in manners that would be economically beneficial to agriculture.

Irrigation Runoff and Environmental Issues

Goal 5: Improve the quality of irrigation water runoff and reduce the extensive use of pesticides and other chemicals to minimize impacts to downstream water bodies, wetland habitats, and the overall environment.

Objective 5.1 The County shall participate and encourage multi-agency participation in finding long-term solutions to reduce existing high levels of salt and selenium, originating from Colorado River water, in downstream drainage ditches and the Salton Sea.

Objective 5.2 The County shall participate and encourage multi-agency participation in developing strategies to reduce the use of pesticides and other chemicals without negatively impacting agricultural production; and thereby reduce the drainage of toxic elements into downstream drainage ditches and the Salton Sea.

Objective 5.3 Ensure the continued availability of the Salton Sea as a depository for irrigation runoff.

Objective 5.4 The County shall continue to work closely with University of California Cooperative Extension personnel, college horticultural or entomological faculty, pest control advisers, and other pest management specialists to develop Integrated Pest Management (IPM) as a pest management strategy that focuses on long-term prevention or suppression of insects, plant pathogens, weeds, rodents, and other pests with minimum impact on human health, the environment, and nontarget organisms.

Objective 5.5 Encourage uses of naturally occurring biological control; alternate plant species or varieties that resist pests; pesticides with a lower toxicity to humans or nontarget organisms; and irrigation, cultivation, and fertilizing practices that reduce pest problems.

Objective 5.6 Use broad spectrum pesticides only as a last resort when careful monitoring indicates they are needed according to preestablished guidelines. When treatments are necessary, the least toxic and most target-specific pesticides should be chosen.

Objective 5.7 The Agricultural Commissioner's Office shall continue to ensure that applicators of farm chemicals are educated regarding current pesticides and other chemicals, their hazards, and applications.

Agricultural Regulations

Goal 6: Strive to prevent the adoption of inappropriate, unnecessary, and restricting Federal, State, and local regulations that threaten the ability of farmers and livestock producers to profitably produce food and fiber for the nation.

Objective 6.1 The County shall not adopt regulations that impact agricultural production unless they are justified on the basis of sound environmental concerns.

Objective 6.2 Assist farmers and livestock producers in their efforts to understand and abide by regulations and to process applications for permits and licenses.

Objective 6.3 Oppose programs and regulations that seek to dictate animal husbandry practices based on religious beliefs, emotions, or misconceptions rather than on scientific evidence.

Public Relations and Education

Goal 7: Establish positive relations with the general public and inform the general public that the County's entire economy is intricately dependent upon agricultural production.

Objective 7.1 Develop and expand educational programs, such as the Farm Bureau's "Ag in the Classroom", to inform children and adults of the importance of protecting farmland.

Objective 7.2 Continue to make information accessible to the public regarding pesticides used and areas treated, as currently provided by the Agricultural Commissioner's Office.

Objective 7.3 Strive to minimize citizen complaints through public education.

Objective 7.4 Maintain existing procedures provided by the Agricultural Commissioner's Office and the Right To Farm Ordinance that allow for public input without disruption of agricultural operations.

Agricultural Production and Marketing Research

Goal 8: Improve the financial viability of the agricultural sector of Imperial County's economy through actions that have the potential to improve yields and reduce costs.

Objective 8.1 The County shall work closely with and promote the research of the University of California Cooperative Extension; the U.S.D.A Agricultural Research Service; the Animal, Plant Health and Inspection Service; pest management experts, water management experts, and others to continuously develop and implement efficient state-of-the-art farm and livestock production strategies.

Objective 8.2 Promote marketing research at the regional level to monitor trends in the demands for particular commodities such that Imperial County agriculturalists may adjust production strategies in timely manners and thereby maintain a competitive edge in the marketplace.

Objective 8.3 Promote the consumption of locally produced commodities, such as vegetables, beef and dairy products, fish, fruits, nuts, and honey.

Objective 8.4 Continue to promote agricultural research on the expected effects upon commodities under the North American Free Trade Agreement (NAFTA) to provide a competitive edge to Imperial County agriculturalists.

Objective 8.5 The County shall support and encourage the efforts of the Imperial County Whitefly Management Committee to develop the most effective means of controlling this pest. The County shall support and promote similar efforts to eradicate, and/or formulate control strategies for, other new pests that may impact local agricultural production in the future.

Objective 8.6 Encourage the production of labor intensive crops such as vegetables.

Agricultural Packaging/Processing Operations

Goal 9: Increase the value of locally produced agricultural commodities and improve and stabilize the County's economy by promoting local agricultural packaging and processing operations.

Objective 9.1 Allow agriculturally related commercial and industrial uses to be located in agricultural areas that would package, process, or market agricultural commodities produced in the area, provided that the conversion of these facilities to non-agricultural related uses is prohibited.

Objective 9.2 Encourage agricultural packaging/processing facilities in agricultural areas that would employ large numbers of workers.

Objective 9.3 Utilize the following guidelines to analyze the suitability of a proposed agricultural service use:

- it does not adversely affect agricultural production in the area;
- it supports local agricultural production;
- it is compatible with existing agricultural activities and residential uses in the area;
- it does not require the extension of sewer or water lines.

Objective 9.4 Allow and encourage on-farm product handling and selling operations.

Objective 9.5 Allow agricultural produce stands at appropriate locations in agricultural land use areas and Farmer's Markets to promote and market those agricultural products grown or processed in Imperial County.

Special Cattle and Dairy Concerns

Goal 10: Encourage the continuation and expansion of cattle/dairy production on agricultural land.

Objective 10.1 Direct new residential and other urban development away from existing cattle and dairy operations.

Objective 10.2 Emphasize to the general public and to potential developers that the provisions of the Imperial County Right-To-Farm Ordinance (No. 1031) apply to livestock operations such as feed yards and dairies.

Objective 10.3 Allow cattle and dairy producers the ability to operate trucks and equipment, often oversized or overweight, on County roads that are increasingly impacted by more traffic.

Objective 10.4 Ensure the availability of clean, fresh water for cattle and dairy operations without unnecessary restrictions.

Objective 10.5 Support the existence and development of local beef processing operations.

Objective 10.6 Discourage the adoption of "nuisance" related regulation that restrict the ability of cattle and dairy operators to economically and conveniently produce these commodities.

Special Aquaculture Concerns

Goal 11: Encourage the continuation and expansion of aquacultural production.

Objective 11.1 County zoning regulations should define aquaculture as an agricultural use subject to the same rights, provisions, and regulations as other agricultural uses.

Objective 11.2 Emphasize to the general public and to potential developers that the provisions of the Imperial County Right-To-Farm Ordinance (No. 1031) apply to aquaculture facilities.

Objective 11.3 Encourage development by aquaculturalists of privately owned resources such as land, water, and geothermal energy and other underground resources.

Objective 11.4 Allow labor housing on property utilized for aquacultural purposes subject to the same provisions and regulations as farm labor housing on land utilized for other agricultural purposes.

Objective 11.5 Allow on-site processing, packing, and warehousing of aquatic plants and animals at aquaculture producing facilities subject to the same provisions and regulations as those on land utilized for other agricultural purposes.

Objective 11.6 Continue to gather statistics on aquaculture production in the County and report them under the general category "aquaculture products" until production is sufficient to justify separate categories for various products.

C. Relationship to Other General Plan Elements

State law mandates seven Plans or "Elements" for local government General Plans. Although the Agricultural Element is not mandatory, it must comply with requirements that are requisite to all parts within a General Plan. Legislative intent must be fulfilled as set forth in Government Code, Section 65300.5: "...the General Plan and the parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency."

The Agricultural Element Policy Matrix (Table 4) identifies the relationship between the Agricultural Element Goals and Objectives to other Elements of the Imperial County General Plan. The Issue Area identifies the broader goals of the Element and the "Xs" identify that related objectives are contained in the corresponding Elements.

TABLE 4
AGRICULTURAL ELEMENT POLICY MATRIX

Issue Area	Land Use	Housing	Circulation	Noise	Seismic/ Public Safety	Open Space Conservation	Renewable Energy	Water
Agriculture Preservation	X				X	X	X	X
Land Use Planning	X	X	X			X	X	
Water Use							X	X
Environmental Issues	X					X	X	
Agricultural Production	X						X	
Cattle/Dairy	X		X					X
Aquaculture	X							X

IV. IMPLEMENTATION PROGRAMS AND POLICIES

A. Preface

Imperial County has utilized its productive soils, access to water, climate, and other resources to develop into one of the most agriculturally productive regions in the world. Based on information developed for the Agricultural Element of the General plan, it is clear that the County can and should take additional steps to provide further protection for agricultural operations and at the same time provide for logical, organized growth of urban areas. This chapter summarizes the programs and policies that will be used to implement the Goals and Objectives identified in Chapter III.

The single most important action that Imperial County can take to protect agricultural land is to adopt a clear, well-constructed set of goals, objectives, and policies that protect the conversion of agricultural land to non-agricultural uses in the future. The County must be specific and consistent about which lands will be maintained for the production of food and fiber and for support of the County's economic base. Additional implementation measures may be adopted by the County in the future to further the Goals and Objectives identified in this Element.

The Planning Department shall prepare a report to the Planning Commission and Board of Supervisors regarding the use and implementation of the Agricultural Element within two years of the date of adoption. The Agricultural Element should be updated every five years thereafter.

B. Assumptions

Based on current information and trends, County staff has made certain assumptions concerning the future. The following assumptions were utilized in the preparation of this Element:

- It is assumed that land suitable for irrigated agriculture is perhaps the most significant natural attribute of the County and its protection and enhancement is in the best interests of all County residents.
- It is assumed that there will continue to be an opportunity to develop large scale renewable energy projects in Imperial County to serve the needs of California.
- It is assumed that the County's overall economy will be dependent upon agricultural production in the foreseeable future.
- It is assumed that residential, commercial, and urban pressures to expand into existing agricultural area will intensify, and that considerable non-agricultural land use projects will be proposed away from existing urban boundaries in the midst of Important Farmland.
- It is assumed that the agriculture industry will grow, provided that important resources such as productive soils and irrigation water are not significantly reduced and that new restrictive and unreasonable regulations are not placed upon agriculturalists.

- It is assumed that the general public can and will be educated about the continued importance of agriculture to the County's overall well-being.
- It is assumed that long-term environmental problems related to agricultural production, such as salt and selenium levels in the Salton Sea and the use of pesticides and other chemicals, will be reduced through effective projects to water quality in the Sea and through modified pest management strategies on the farm.
- It is assumed that additional agricultural packaging and processing operations would be beneficial to agriculturalists and the County as a whole.

C. Policies and Programs

In order to implement the Goals and Objectives in the previous chapter, the County will adopt the following policies:

1. Preservation of Important Farmland

Policy

The overall economy of Imperial County is expected to be dependent upon the agricultural industry for the foreseeable future. As such, all agricultural land in Imperial County is considered as Important Farmland, as defined by Federal And State agencies, and should be reserved for agricultural uses. Agricultural land may be converted to non-agricultural uses only where a clear and immediate need can be demonstrated, such as requirements for urban housing, commercial facilities, or employment opportunities. All existing agricultural land will be preserved for irrigation agriculture, livestock production, aquaculture, and other agriculture-related uses except for non-agricultural uses identified in this General Plan or in previously adopted City General Plans.

Programs

- No agricultural land designated except as provided in Exhibit C shall be removed from the Agriculture category except where needed for use by a public agency, for renewable energy purposes, where a mapping error may have occurred, or where a clear long term economic benefit to the County can be demonstrated through the planning and environmental review process. The Board (or Planning Commission) shall be required to prepare and make specific findings and circulate same for 60 days (30 days for parcels considered under Exhibit C of this element) before granting final approval of any proposal which removes land from the Agriculture category.

2. Development Patterns and Locations on Agricultural Land

Policy

"Leapfrogging" or "checkerboard" patterns of development have intensified recently and result in significant impacts to the efficient and economic production of adjacent agricultural land. It is a policy of the County that leapfrogging will not be allowed in the future. All new non-agricultural development will be confined to areas identified in this

plan for such purposes or in Cities' adopted Spheres of Influence, where new development must adjoin existing urban uses. Non-agricultural residential, commercial, or industrial uses will only be permitted if they adjoin at least one side of an existing urban use, and only if they do not significantly impact the ability to economically and conveniently farm adjacent agricultural land.

Programs

- All non-agricultural uses in any land use category shall be analyzed during the subdivision, zoning, and environmental impact review process for their potential impact on the movement of agricultural equipment and products on roads located in the Agriculture category, and for other existing agricultural conditions which might impact the project, such as noise, dust, or odors.
- The Planning Department shall review all proposed development projects to assure that any new residential or non-agricultural commercial uses located on agriculturally zoned land, except land designated as a Specific Plan Area, be adjoined on at least one entire property line to an area of existing urban uses. Developments which do not meet this criteria should not be approved.
- The Planning Department shall identify "paper subdivisions" in predominantly agricultural areas where common ownership could enable lot mergers or reversions to acreage to be done in order to reduce the potential for residential development.
- Establish and maintain County Zoning Ordinance requirements for a minimum lot size of 40 acres in land designated "Agriculture" on the Land Use Plan.

3. Agricultural and Non-Agricultural Land Use Relations

Policy

Any new growth increases the potential for new conflicts with existing agricultural land uses. It is the policy of the County that the burden for preventing or mitigating agricultural/non-agricultural land use conflicts falls on the developer of the non-agricultural land use.

Programs

- Identify important transportation routes used by agriculturalists in non-agricultural areas and post signs warning drivers that these routes are frequently used to transport farm products and oversized farm equipment.
- The Planning Department shall post and maintain copies of the County's "Right-to-Farm" Ordinance at their public counter. All building permit applicants proposing non-agricultural uses on land zoned or designated for agriculture, shall be given a copy of the notice and sign a statement that they have received the copy.

4. Water Availability and Conservation

Policy

Agricultural production in Imperial County is dependent upon adequate and affordable irrigation water, and the County is committed to protect its access to this resource. The County is also committed to conserving water by promoting the development of structural and non-structural measures, including improved on-farm irrigation water management systems.

Programs

- All subdivisions and discretionary projects which require the extension of water service in excess of that necessary for a single residence, shall include an analysis of water use impacts as part of the environmental review process. This shall include potential growth inducing impacts affecting continued agricultural uses in the vicinity of the project where appropriate.
- The County shall establish landscape plan review procedures for new development in order to regulate and encourage the economical use of domestic water resources through the promotion of drought resistant native and non-native desert landscaping in all types of urban development.

5. Irrigation Runoff and Environmental Issues

Policy

As a depository for irrigation runoff, the Salton Sea receives salt and selenium originating from the Colorado River, and pesticides and other chemicals originating from agricultural practices. The County is committed to seek effective and long-term solutions to agriculture-related environmental problems.

Programs

- Form a working group comprised of the Regional Water Quality Control Board, Farm Bureau, Imperial Irrigation District, and County staff to study methods that would reduce the amount of contaminants transported into the Salton Sea.

6. Agricultural Regulations

Policy

The County recognizes that Federal, State, and local regulations have made it increasingly difficult for farmers and livestock producers to conveniently and profitably produce food and fiber, and is committed to oppose all new regulations that impact agricultural production, unless they are justified on the basis of sound environmental concerns.

Programs

- The County shall monitor and comment on bills and regulations introduced in the State and Federal legislatures affecting agricultural lands. The Board of Supervisors shall transmit their position on such bills directly to the legislature or via Imperial County's local legislators.

7. Public Relations and Education

Policy

Positive relations between the agricultural industry and the general public are essential if agricultural production is to remain viable and expand. The County encourages the development of educational programs that teach children and adults about agricultural activities and about the importance of protecting farmland for the benefit of the nation's food supply and support of the local economy.

Programs

- Provide County staff support for classroom educational programs, such as the Farm Bureau's "Ag in the Classroom", to inform children and adults of the importance of protecting farmland.
- Support the Mid-Winter Fair, Brawley Cattle Call, and other new community events and activities which remind local residents of the County's agricultural history at its economic importance. An example of a possible new event is a cattle or sheep "drive" followed by a picnic with games and exhibits.

8. Agricultural Production and Marketing Research

Policy

The County is committed to improve the financial viability of agricultural production through the improvement of agricultural yields and reduction of production costs. All research related to developing more efficient and productive agricultural strategies, and to contributing a marketing edge to County agriculturalists, is supported and encouraged.

Programs

- Continue to support and encourage work by the U.C. Cooperative Extension to assure that local agriculturalists are kept up-to-date on the latest advances in agricultural production, product market trends, and other new information so that agricultural practices can adjust to market conditions and production strategies.
9. Agricultural Packaging/Processing Operations

Policy

The agricultural industry, and indeed the overall County economy, would benefit immensely from the development of new agricultural packaging and processing operations. The County will promote such development and will permit these operations to be located on Important Farmland if they are deemed to improve agricultural production as a whole, and if they are determined not to significantly impact production of surrounding agricultural land. The County will support this with the requirement that these facilities may not later be converted to non-agricultural uses.

Programs

- Amend the County Zoning Ordinance to facilitate with appropriate restrictions the establishment of local facilities in agricultural areas to package, process, or market agricultural commodities produced in the area. Among the restrictions shall be a condition to prohibit the conversion of these facilities to non-agricultural uses.
 - Amend the County Zoning Ordinance as needed to permit stands for the sale of locally grown or processed agricultural products in agricultural areas.
10. Special Cattle and Dairy Concerns

Policy

The County recognizes cattle and dairy production and integral components of the overall agricultural industry, and supports the continuation and expansion of these operations. All land uses that pertain to the protection of Important Farmland also apply to the cattle and dairy operations.

Programs

- Include with all notices to the general public and to potential developers that the provisions of the County Right-To-Farm Ordinance apply to livestock operations such as feedyards and dairies.
- Amend the County Zoning Ordinance as needed to facilitate the local beef processing operations.

11. Special Aquaculture Concerns

Policy

Aquaculture is recognized as one of the fastest growing industries in the County, and is deemed beneficial to the County. The County supports the continuation and expansion of aquaculture, and will treat aquaculture facilities and land uses as agricultural facilities and land uses.

Programs

- Amend the County Zoning Ordinance as needed to assure that aquaculture enjoys the same land use rights as other agricultural uses.
- Amend the County Zoning Ordinance as needed to permit, with appropriate review for compliance with local and state regulations, labor housing on property utilized for aquacultural purposes.

APPENDIX A
DEPARTMENT OF CONSERVATION
FARMLAND MAPPING AND MONITORING PROGRAM

DEFINITIONS FOR IMPORTANT FARMLAND MAP CATEGORIES¹

Prime Farmland². *Prime Farmland* is land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. *Prime Farmland* must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Statewide Importance². *Farmland of Statewide Importance* is land other than *Prime Farmland* which has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Unique Farmland. *Unique Farmland* is land which does not meet the criteria for *Prime Farmland* or *Farmland of Statewide Importance*, that has been used for the production of specific high economic value crops (as listed in California Agriculture produced by the California Department of Food and Agriculture) at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Local Importance. *Farmland of Local Importance* is either currently producing crops, or has the capability of production. *Farmland of Local Importance* is land other than *Prime Farmland*, *Farmland of Statewide Importance*, or *Unique Farmland*. This land may be important to the local economy due to its productivity. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

This category varies from county-to-county and is determined by each county's board of supervisors and a local advisory committee.

¹ These definitions have been excerpted from A Guide to the Farmland Mapping and Monitoring Program, 1992, Department of Conservation, Office of Land Conservation, Publication Number FM-92-01.

² Soil types qualifying for these two categories are provided by the U.S. Soil Conservation Service.

Grazing Land. *Grazing Land* is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. The minimum mapping unit for *Grazing Land* is 40 acres.

Urban and Built-up Land. *Urban and Built-up Land* is used for residential, industrial, commercial, construction, institutional, public administrative purposes, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as a part of *Urban and Built-up Land* if they are a part of the surrounding urban areas.

The minimum mapping unit is ten acres. Units of land smaller than ten acres will be incorporated into the surrounding map classifications. The building density for residential use must be at least one structure per 1.5 acres (or approximately 6 structures per 10 acres). *Urban and Built-up Land* must contain man-made structures or the infrastructure required for development (e.g., paved roads, sewers, water, electricity, or in specific circumstances, drainage or flood control facilities) that are specifically designed to serve that land. Parking lots, storage and distribution facilities, and industrial uses such as large packing operations for agricultural produce will generally be mapped as *Urban and Built-up Land*, even though they are associated with agriculture.

Urban and Built-up Land does not include strip mines, borrow pits, gravel pits, farmsteads, ranch headquarters, commercial feedlots, greenhouses, poultry facilities, and road systems for freeway interchanges outside of areas classified as *Urban and Built-up Land* areas.

Within areas classified as *Urban and Built-up Land*, vacant and nonagricultural land which is surrounded on all sides by urban development and is 40 acres or less in size will be mapped as *Urban and Built-up Land*. Vacant and nonagricultural land larger than 40 acres in size will be mapped as *Other Land*.

Other Land. *Other Land* is that which is not included in any of the other mapping categories. The following types of land are generally included:

- a. Rural development which has a building density of less than one structure per 1.5 acres, but with at least one structure per ten acres;
- b. Brush, timber and other lands not suitable for livestock grazing;
- c. Government lands not available for agricultural use;
- d. Road systems for freeway interchanges outside of *Urban and Built-up Land* areas;
- e. Vacant and nonagricultural land larger than 40 acres in size and surrounded on all sides by urban development;
- f. Confined livestock facilities of 10 or more acres unless accounted for by the county's definition for *Farmland of Local Importance*;
- g. A variety of other rural land uses;

- h. Strip mines, borrow pits, gravel pits, ranch headquarters larger than 10 acres.

Land Committed to Nonagricultural Use. *Land Committed to Nonagricultural Use* is land that is permanently committed by local elected officials to nonagricultural development by virtue of decisions which cannot be reversed simply by a majority vote of a city council or county board of supervisors.

County boards of supervisors and city councils will have the final authority to designated lands in this category pursuant to the requirements of this section. The Department will work with city and county planning staffs to obtain this information.

Land Committed to Nonagricultural Use will be shown on an overlay to the Important Farmland Series maps (and Interim Farmland Maps). The current land use will be indicated on the base map, with the overlay indicating the areas that are *Committed to Nonagricultural Use*.

Land Committed to Nonagricultural Use must be designated in an adopted, local general plan for future nonagricultural development. The resulting development must meet the requirements of *Urban and Built-up Land* or the rural development density criteria of *Other Land*.

Land Committed to Nonagricultural Use must also meet the requirements of either (a) or (b) below:

- a. It must have received on the following final discretionary approvals:
 - 1. Tentative subdivision map (approved per the Subdivision Map Act);
 - 2. Tentative or final parcel map (approved per the Subdivision Map Act);
 - 3. Recorded development agreement (per Section 65864 of the Government Code);
 - 4. Other decisions by a local government which are analogous to items #1-3 above and which exhibit the element of permanence discussed in *Land Committed to Nonagricultural Use*. Zoning by itself does not qualify as a permanent commitment.

OR

- b. It must be the subject of one of the final fiscal commitments to finance the capital improvements specifically required for future development of the land in question as shown below:
 - 1. Recorded Resolution of Intent to form a district and levy an assessment;
 - 2. Payment of assessment;
 - 3. Sale of bonds;

4. Binding contract, secured by bonds, guaranteeing installation of infrastructure;
5. Other fiscal commitments which are analogous to items #1-4 above and exhibit the element of permanence discussed for *Land Committed to Nonagricultural Use*.

Land Committed to Nonagricultural Use will be mapped when the respective local government notifies the Department that the land meets qualifying criteria and submits maps at a scale of 1:24,000 identifying the area and showing its boundaries. The notification referred to will be subject to verification by the Department. In the case of land identified per Sections (a)4 and (b)5, the local government must also provide the Department with documentation of the permanent commitment.

APPENDIX B
RIGHT TO FARM ORDINANCE

(From Division 2, Title 6 of the Codified Ordinances of the County of Imperial)

Section 62950.	Findings and Policy
Section 62951.	Definitions
Section 62952.	Nuisance
Section 62953.	Disclosure
Section 62954.	Resolution of Disputes
Section 62955.	Severability

§62950. Findings and Policy.

(a) It is the declared policy of this County to enhance and encourage agricultural operations within the County. It is the further intent of this County to provide to residents of this County proper notification of the County's recognition and support through this ordinance of those persons' and/or entities' right to farm.

(b) Where non-agricultural land uses extend into agricultural areas or exist side by side, agricultural operations frequently become the subjects of nuisance complaints due to lack of information about such operations. As a result, agricultural operators are forced to cease or curtail their operations. Such actions discourage investments in farm improvements to the detriment of adjacent agricultural uses and the economic viability of the County's agricultural industry as a whole. It is the purpose and intent of this ordinance to reduce the loss to the County of its agricultural resources by clarifying the circumstances under which agricultural operations may be considered a nuisance. This ordinance is not to be construed as in any way modifying or abridging State law as set out in the California Civil Code, Health and Safety Code, Fish and Game Code, Food and Agricultural Code, Division 7 of the Water Code, or any other applicable provision of State law relative to nuisances; rather it is only to be utilized in the interpretation and enforcement of the provisions of this ordinance and County regulations.

(c) An additional purpose of this ordinance is to promote a good neighbor policy by advising purchasers and users of property adjacent to or near agricultural operations of the inherent potential problems associated with agricultural operations. Such concerns may include, but are not limited to, noises, odors, light, fumes, insects, dust, chemicals, smoke, the operation of machinery of any kind during any 24 hour period (including aircraft), the storage and disposal of manure, and the application of chemical fertilizers, soil amendments, and pesticides. It is intended that, through mandatory disclosures, purchasers and users will better understand the impact of living near agricultural operations and be prepared to accept attendant conditions as the natural result of living in or near rural areas.

§ 62951. Definitions.

As used in this Chapter No. 1.

(a) "Agricultural Land" shall mean all that real property within the boundaries of Imperial County currently used for agricultural operations or upon which agricultural operations may in the future be established.

(b) "Agricultural Operation" shall mean and include, but not be limited to, the cultivation and tillage of the soil; dairying; the production, irrigation, application of agricultural chemicals, frost protection, cultivation, growing, harvesting, packing and processing of any agricultural commodity, including production of vegetables, fruits, forage, grain seeds, fiber and all other plants; viticulture, horticulture, apiculture, aquaculture; the raising of livestock, fur bearing animals, game birds and all other kinds of animal husbandry; the culture or breeding of livestock, poultry, fish, marine life, and all other types of animal or plant life; and commercial practices performed as incident to or in conjunction with such agricultural operations, inclusive of the operation of equipment (including agricultural aircraft, and machinery); selling, processing, packing, preparation for market, delivery to storage or market or to carriers for transportation to market. Agricultural operations shall also include innovative and experimental methods of accomplishing agricultural operations when such methods are found and determined to be a reasonable alternative, or improvement, to currently accepted methods of operation.

§ 62952. Nuisance.

No present or future lawful agricultural activity, operation, or facility or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in Imperial County, shall be or become a nuisance, public or private, if it was not a nuisance when it began. Provisions of this ordinance shall not apply whenever a nuisance results from the negligent, unlawful or improper operation of any such agricultural operation or if the agricultural operation obstructs the free passage or use, in the customary manner, of any navigable lake, river, stream, canal, basin; any public park, square street or highway.

§ 62953. Disclosure.

(a) The disclosure statement required by this ordinance shall be used under the following circumstances and in the following manners:

(1) The County of Imperial Tax Collector shall mail a copy of the disclosure set forth in subpart (b) to all owners of real property in Imperial County with the annual 1990-1991 tax bill.

(2) The County of Imperial Recorder shall mail a copy of the disclosure set forth in subpart (b) with all real property conveyances returned by mail.

(3) The Planning Director/Building Official shall cause the notice described in subsection (b) to be included and/or attached to all building permits

issued in Imperial County for projects on land that lies partly or wholly within, or within 1/4 of a mile of agricultural land.

(b) The disclosure required by subsection (a) shall be the following:

"The County of Imperial permits operation of properly conducted agricultural operations within the County. If the property you are purchasing or own is located near agricultural lands or operations or included within an area zoned for agricultural purposes, you may be subject to inconveniences or discomfort arising from such operations. Such discomfort or inconveniences may include, but are not limited to: noises, odors, light, fumes, dust, smoke, insects, chemicals, operation of machinery (including aircraft) during any 24 hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. One or more of the inconveniences described may occur as a result of any agricultural operation which is in conformance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in a county with a strong rural character and an active agricultural sector. Imperial County has established a grievance committee to assist in the resolution of any disputes which might arise between residents of this County regarding agricultural operations. If you have any questions concerning this policy or the grievance committee, please contact the Agricultural Commissioner's Office at 339-4314."

§ 62954. Resolution of Disputes.

(a) Should any controversy arise regarding any inconveniences or discomfort occasioned by agricultural operations, including, but not limited to, noises, odors, fumes, light, dust, the operation of machinery of any kind during any 24 hour period (including aircraft), the storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides, the parties may submit the controversy to a grievance committee ("County Agricultural Grievance Committee") as set forth below in an attempt to resolve the matter prior to the filing of any court action.

(b) Any controversy between the parties may be submitted in writing to the Imperial County Agricultural Commissioner within 15 calendar days of the occurrence of the particular activity giving rise to the dispute. The Agricultural Commissioner, within 15 calendar days, will review the written complaint and attempt to mediate the dispute. If mediation is not achieved, the Agricultural Commissioner shall notify the County Agricultural Grievance Committee within 15 days, of his determination. The County Agricultural Grievance Committee, whose decision shall be advisory only, shall meet within thirty (30) days of the date the Committee receives the notice of determination by the Agricultural Commissioner.

(c) The County Agricultural Grievance Committee shall be composed of three (3) members selected from the community by the Imperial County Board of Supervisors, and may include representatives from the County Agricultural Commissioner's Office, a local real estate association, local pest control operators association and/or representatives of other county offices.

(d) The effectiveness of the County Agricultural Grievance Committee as a forum for resolution of disputes is dependent upon a full discussion and complete presentation of all pertinent facts concerning the dispute in order to eliminate any misunderstandings. The parties are encouraged to cooperate in the exchange of pertinent information concerning the controversy.

(e) The controversy shall be presented to the Committee by written requests of one of the parties or the County Agricultural Commissioner within the time limits specified. Thereafter the Committee may investigate the facts of the controversy, but must, within thirty (30) days, from receipt of the request, hold a meeting to consider the merits of the matter. At the time of the meeting both parties shall have an opportunity to present what each considers to be pertinent facts. Within twenty (20) days of the meeting, the Committee shall render a written decision to the parties.

(f) Any costs of the grievance, including the investigative costs, shall be borne by the losing party or in such proportion as the County Agricultural Grievance Committee shall decide.

§ 62955. Severability.

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, it shall not affect the remaining portions of the ordinance.

|| Adopted by the County Board of Supervisors on August 7, 1990, as Ordinance 1031. ||

EXHIBIT C

PURPOSE:

While one of the major objectives of both the Land Use Element and the Agriculture Element is the protection and enhancement of agricultural land, there are a few areas within the Agriculture designation that warrant special consideration to allow limited further development. These areas generally consist of a group (6 or more) of small parcels (1/2 to 10 acres maximum) which generally have existing residences mixed with vacant parcels already impacting agricultural operations within the boundary of the enclave. The parcels and residences are arranged in a way where farming within this enclave is difficult or impossible. An example of such an area is one where past subdivisions were allowed encompassing an area of about 40 acres. By evaluating each such area on a case by case basis, there may be opportunities to allow some additional "country" or "rural" homes, within already impacted areas while concurrently protecting further development of viable agricultural land.

POLICY:

The County Planning Commission and/or Board of Supervisors may on a case by case basis consider allowing the further subdivision of existing small parcels within indentified existing enclaves that meet all of the following parameters:

The existing and the proposed parcels meet or can meet minimum health and safety standards for potable water, for fire protection, for police protection and for sewage disposal.

There are six (6) or more existing small, contiguous parcels within a confined area.

There are at least six (6) existing residences within the enclave.

The enclave consists of parcels sized to allow further division while still meeting minimum parcel sizes for the underlying zone.

The further division of land within the enclave does not promote the enlargement of the outer boundary of the area.

PROCEDURE:

Upon receipt of a subdivision application, the Planning/Building Department staff shall determine whether or not the proposed division is located within an area that qualifies for the exception under this Exhibit. In processing such an application, the County staff shall analyze the full impacts of allowing further divisions, including additional agricultural impacts, the provisions of public services such as fire and police, the capacity and ability to provide potable water and sewage treatment, the additional traffic, and enhance agricultural land conservation.

EXCLUSION:

The exceptions intended within this Exhibit shall not be allowed or considered if the proposed division further impacts designated agriculture lands. For example, four (4) or more contiguous residences located among large agricultural parcels cannot be considered as a qualifying enclave. It shall also not be used to develop existing but undeveloped pre-1967 subdivisions.

FINDINGS:

To allow divisions of land within an identified enclave the Commission and/or Board of Supervisors must be able to make the following findings:

- 1) The division is within an impacted enclave that will not further adversely impact surrounding agricultural operations;
- 2) The division enhances agricultural land protection by converting existing impacted land more efficiently and by keeping other agricultural land protected.
- 3) The division is within an existing enclave of five (5) or more shall (<10 acre) parcels, and five (5) or more existing residences;
- 4) The parcel(s) shall not be less than .5 acres net if a full soils report shows adequate soil conditions to support development and long term sewage disposal capacity. Larger size parcels will be required, if the soil report or other factors necessitate;
- 5) The area can be provided adequate fire and police protection services. A written statement from the Fire Department and the Sheriff/Police Department shall be required;
- 6) The division can mitigate and comply with added traffic impacts;
- 7) The proposed division has an adequate supply of water to each parcel, through an acceptable conveyance system, and can or will provide potable water to each parcel.
- 8) Each existing, as well as proposed parcel, abuts a public road or highway and/or has legal and physical access via a County road.
- 9) The long term impacts of additional sewage disposal system within the enclave is verified and can sustain the additional loads as shown by acceptable engineering studies.