

CONSERVATION ELEMENT

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Soil, water, and wildlife have historically been three of the most valuable resources. The nature of land in regard to its location, soil composition, topographic features, and water availability determines the value not only in monetary terms, but also to the community as a whole. Water is a precious commodity which must be conserved and used wisely in order to provide adequate supplies for both domestic uses and agricultural uses.

Knowledge of the soil suitability or limitations in Imperial assists in the process of determining proper land uses and conserving limited resources. It can also help in avoiding the economic losses, social costs, and severe individual hardships that result from structural damage to homes by the failure of private subsurface foundations and disposal systems and from soil erosion and sedimentation. In the following pages, the Conservation Element identifies and evaluates the general soil composition in Imperial in terms of the soil associations that exist and some of the soil-related problems that can occur without proper soil management.

Table CS-1 illustrates the general soil associations that exist in Imperial; Figure CS-1 delineates their boundaries.

Table CS-1 illustrates that the soil associations located in Imperial do pose problems for development because most of the soils have high shrink-swell behavior, are not generally suitable for septic tanks, do not capture and hold run-off well, and are highly erosive. Table CS-1 further illustrates the relative problems associated with the soils found in the City.

Conservation Goal

Conservation in Imperial should be concentrated in the areas of soils management, wildlife conservation, water conservation, and agricultural land preservation.

Soil Management and Conservation Techniques

Objective 1

The City shall establish and maintain proper soil management techniques to reduce the adverse effects of soil-related problems such as shrink-swell behavior, erosion, run-off potential, and septic tank failure.

Policy 1

- A. Development proposed in areas where there is a high shrink-swell behavior causing expansive soils shall be required to use appropriate construction techniques recommended by a registered engineer.
- B. Erosion shall be controlled during construction through proper planning and grading techniques.
- C. Long term erosion shall be controlled by vegetation replanting and the installation of proper drainage control devices where necessary.
- D. The City shall adopt appropriate ordinances which ensure proper erosion control during both the construction phase and over the long-term.
- E. Agricultural areas should not be disturbed to the extent that erosion will occur without the initiation of proper soil management measures.

- F. Soils having a high or moderate permeability capacity or rate should be left in their natural state to reduce run-off and encourage groundwater recharge.
- G. Parcels within the City limits but not within close proximity to an available sewer transmission line should be required to install a dry sewer hook-up for future utilization of the community sewer system.
- H. All septic tanks shall be approved by the County Department of Health as a result of on-site tests certified by a qualified engineer.

Water Conservation

Natural water systems such as surface waters and groundwater are a key element in the environmental composition of the community. Surface waters induce vegetative growth, create and sustain animal habitat, and provide natural borders in the form of creeks and channels. Groundwaters also induce vegetation, but more importantly, they provide long-term water storage. The City of Imperial considers the natural waters a principal resource worthy of active conservation.

Surface Waters

Objective 2

Water resources in the City should be conserved through the retention of the use of the Irrigation District Canals for storm runoff, the protection of limited groundwater resources, and domestic conservation measures.

Policy 2

- A. Canals in rural residential areas should be visually enhanced with landscaping. Landscaping must not restrict or hinder the general maintenance and upkeep of the canals.
- B. In urban areas, the canals should continue to be used for storm drain water; however, the protection of life and property may require the use of alternatives or other methods of controlling storm water flow in the future. Any plans to incorporate irrigation canals into a comprehensive storm drain system will be subject to review and approval by the irrigation district.
- C. The City should study the feasibility of locating a retention basin for storm water in the south end of the City.
- D. Substances such as toxic wastes or untreated sewage shall not be discharged into the City's natural water resources.
- E. The City shall periodically re-examine the policy of using the Imperial Irrigation Canals for storm drainage water.

Groundwater Resources

Objective 3

Groundwater resources should be protected to ensure that the available supply is not prematurely depleted.

Policy 3

- A. The City should adopt appropriate ordinances or guidelines to ensure that groundwater resources are protected prior to development review approval.
- B. Agricultural uses are strongly encouraged to use the irrigation canals for water supply.
- C. Prior to the withdrawal of groundwater for any use the City should require a hydrogeologic study to determine any and all impacts associated with the proposed withdrawal.

Water Conservation

Objective 4

New construction and development should conserve water through minimizing water usage and waste.

- A. *All residential construction shall be required to install low-volume toilets, showers, and faucets.*

- B. *New development projects should install water-conserving appliances (washing machines, dishwashers).*
- C. *The usage of primarily drought-tolerant native plants shall be required through review and approval of landscaping plans by City staff.*
- D. *Use of xeriscape landscaping techniques for homes and businesses should be strongly encouraged.*
- E. *Residential projects having common green areas and all commercial, manufacturing, and public projects shall be required to install automatic irrigation systems.*
- F. *The usage of drip irrigation shall be required where feasible.*
- G. *Alternate water conservation systems such as grey water usage in residences shall be examined and initiated, if feasible.*
- H. *New residential construction should be preplumbed for reclaimed water through a dual on-site distribution system. Anticipated non-potable uses include landscaping, lawn maintenance and crop irrigation. All reclaimed water systems shall be in compliance with the State of California Regional Water Quality Control Board guidelines and basin objectives as well as CEQA and NEPA guidelines.*
- I. *Residential units connected to the community sewage collection system shall not use salt-based water softeners.*

Policy 4

- A. Enforce an ordinance which prohibits over watering of lawns and other landscaping by prohibiting excessive runoff into streets and other public right-of-ways.
- B. Support regional and state efforts to protect water availability for the Imperial Valley area.
- C. Encourage efficient management of irrigation water delivery and promote tailwater recovery programs on farm lands and ranches.

Water Quality Preservation - Surface Waters

Objective 5

Protect surface water quality to ensure healthful drinking water supplies.

Policy 5

- A. Prevent contamination of surface water sources by requiring agricultural canals and drains to be fenced or undergrounded when located adjacent to urban development areas.
- B. Report contamination problems promptly to the IID and the Regional Water Quality Control Board.

Water Quality Preservation - Ground Waters

Objective 6

Prevent ground water contamination to ensure future viable uses of existing ground water resources.

Policy 6

- A. Identify potential and actual sources of groundwater pollution.
- B. Coordinate with the State Regional Water Quality Control Board to obtain cease and desist orders against uses which are polluting the groundwater.

Agricultural Land Conservation

Objective 7

Conserve agricultural land to the maximum extent feasible as outlined in the Land Use Element.

Policy 7

- A. Prevent urban encroachment on agricultural lands designated in the Land Use Element to remain in agriculture.

- B. Encourage the production of crops which can be cultivated economically in close proximity to urban development areas.
- C. Encourage the planting of trees to act as wind breaks, thereby helping to prevent crop damage due to high winds.
- D. Map prime farmland areas and encourage development in areas not designated as prime farmland.

Wildlife Conservation

Objective 8

Conserve and protect sensitive wildlife habitat areas identified as such by the California Department of Fish and Game.

Policy 8

- A. Prevent elimination of valuable wetland habitats.
- B. Coordinate with the State Department of Fish and Game to ensure maximum conservation of wetland habitat along irrigation canals and drains.
- C. Prevent premature or unnecessary undergrounding of canals or drains which would remove wetland habitat.

- D. Protect Burrowing Owl habitat to the maximum extent feasible.
- E. Prevent premature removal of burrows in canal and drain banks due to construction activity.
- F. Coordinate with the State Department of Fish and Game to facilitate relocation of owls to other suitable habitats when necessary.
- G. When development projects are approved in rural areas, ensure that appropriate mitigation measures are required to protect and conserve sensitive wildlife areas.
- H. Identify and list sensitive, rare, and endangered species found within the City's Sphere of Influence Planning area.

Flood Control

Objective 9

Identify flood prone areas and prevent construction of residences in areas with severe flooding potential.

Policy 9

- A. Map flood prone areas within the Sphere of Influence Planning Area utilizing maps produced by the Federal Emergency Management Agency.

- B. Ensure all new development projects provide a grading, drainage, and flood control plan prepared by a registered engineer which provides methods for flood control and protection during a 100 year storm event.
- C. Withhold building permits for residential construction in areas with severe flooding when such flooding cannot be adequately mitigated or controlled.
- D. Support efforts to create a County wide flood control district to address all local and regional flood control problems.
- E. Ensure adequate flood control facilities are constructed to prevent severe soil erosion during storms.
- F. Ensure that the finished floor elevation of all new residences is at least 12 inches above the top of the adjacent curbs.

NOTES TO TABLE CS-1 (SOILS)

1. Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are placed in one of four groups on the basis of the intake of water after the soils have been wetted and have received precipitation from long-duration storms.

The four hydrological soil groups are:

Group A

Soils having a high infiltration rate (low runoff potential when thoroughly wet). These consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.

Group B

Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a slow rate of water transmission.

Group C

Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils that have a layer that impedes the downward movement of water or soils that have moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D

Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clay soils that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

2. Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation.

If the degree of soil limitation is expressed as slight, soils are generally favorable for the specified use and limitations are minor and easily overcome; if moderate, soil properties or site features are unfavorable for the specified use, but limitations can be overcome by special planning and design; and if severe, soil properties or site features are so unfavorable or difficult to overcome that major soil reclamation, special designs, or intensive maintenance is required. Soil suitability is rated by the terms good, fair, or poor, which, respectively, mean about the same as the terms slight, moderate, and severe.

3. Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others the swelling was estimated on the basis of the kind and amount of clay in the soil and on measurements of similar soils. The size of the load and the magnitude of the change in soil moisture content also influence the swelling of soils.

Shrinking and swelling of some soils can cause damage to building slabs and

foundations, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

A slight limitation indicates that soil properties generally are favorable for the specified use; any limitation is minor and easily overcome. A moderate limitation indicates that soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design. A severe limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

4. Grain and seed crops are seed-producing annuals used by wildlife. The major soil properties that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Major soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, ryegrass, lana vetch, clover, and alfalfa.

