

COUNTY OF HUMBOLDT  
DEPARTMENT OF PUBLIC WORKS

ROADWAY DESIGN STANDARDS MANUAL

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## FOREWORD

### Purpose.

This Manual establishes policies and standards for the Roadway Design function of the Humboldt County Department of Public Works. Also included in the Manual are desirable design practices. These policies, standards and practices are to be used to direct, guide and inform County employees involved in the Roadway Design function.

### Scope.

The scope of this Manual is primarily restricted to those Roadway Design functions which are referred to as "secondary" design and "final" design. Of necessity, design engineers must concern themselves with all phases of design, including planning, design, and coordination with construction contractors. Therefore, occasional reference is made to desired practices regarding preliminary engineering, field review, and construction or coordination with other functional organizations within the Department of Public Works and County Government.

The design standards contained herein will apply to all County design projects except where Federal authorities require adherence to higher standards.

### Objectives.

Humboldt County plans to design new roads and roadway improvements which will provide adequate and safe community service. County Roadway Design must also promote reasonable roadway construction costs, reduced unit maintenance costs, and reasonable reconstruction costs. These objectives must be accomplished with available revenues.

Design policies and standards are intended to guide and inform those Public Works employees involved in the Roadway Design function and are to be viewed as reasonable goals for improvements. It is the intent of the County

to establish a program by which existing roadways will be improved, where necessary, to meet these standards and to develop a plan for realizing this objective. The objective of this Manual, therefore, is to provide the specific policy guidelines, engineering standards, and desired design practices which will facilitate accomplishment of the aforesaid County Roadway Design objectives.

It is also the intent of this Manual to remind Public Works Design employees of certain legal aspects of roadway design. Current "ideas" on drainage law, for example, are included in Section 4. The law itself, of course, must be interpreted by County Counsel.

This Manual, through selection of content and format, is intended not only for the engineers, who will be the most frequent users of it, but also for maintenance personnel, administrators, and other readers who are not technically-oriented. The Table of Contents footnotes those sections of the Manual which may be most pertinent to each individual reader's needs.

#### Qualification of Intent.

It is not the function of this Manual to establish legal standards for roadway design, nor to restrict sound engineering theory or judgment. Design engineering is an empirical science; therefore, certain design standards by necessity are expressed as ranges of acceptable values. Furthermore, it is not intended that any standard of conduct or duty toward the public shall be created or imposed by the publication of this Manual. This Manual is intended as an operational tool for administering roadway design.

This Manual is not a textbook, nor is it a substitute for engineering knowledge, experience, or judgment. The graphs, tables, and words concerning desired practices are intended as aids in the solution of field and office problems. No attempt is made to detail basic engineering techniques; for these, standard textbooks should be used.

Authority of Manual.

This Manual has been developed under the authority of the Humboldt County Board of Supervisors. It is the intent of the Board that this Manual be interpreted and used to accomplish the objectives outlined earlier in this Foreword. Policies regarding specific design practices are included in later sections of this Manual.

It is the desire of the Board to maintain this Manual through the incorporation of current information; therefore, assistance in the form of ideas and suggestions for revisions or additions will be appreciated. Additions, deletions or revision to the engineering standards and/or design practices contained herein will be accomplished by the Director of Public Works under authority granted to him by the Humboldt County Board of Supervisors. Changes in County policy will be recommended to the Board of Supervisors by the Director of Public Works for approval prior to inclusion into this Manual.

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Director of Public Works

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|--------------------------|-------------------------------------|
| A - Administrators       | P - Public (laymen)                 |
| B - Board of Supervisors | M - Maintenance Personnel           |
|                          | O - Other Involved County Personnel |

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## SECTION 1 - ADMINISTRATION OF ROADWAY DESIGN

### 1-100 General.

### 1-101 Objective and Scope.

The objective of this Section is to present County policy regarding the administration of roadway design, the authority relationships involved, definitions of roadway terms, and information regarding maintenance of the Manual. The intended use of policies, standards and design practices is also explained in this Section.

### 1-102 Policy.

1-102.1 Administration - It is the policy of Humboldt County that the Director of Public Works, acting in his capacity as County Road Commissioner, will be responsible for the administration of policies and standards contained herein.

1-102.2 Application of Policy and Standards - It is the policy of Humboldt County that the Design policies and standards will be applied to the design of new roads or improvements, as defined in Sections D and E of the State of California City and County Projects Manual, or as designated by the Director of Public Works. An objective is to ultimately improve selected County roads to these standards by assigning improvement priorities to roads which deviate most significantly from these standards.

1-102.3 Maintainability - It is the policy of Humboldt County that roadways will be designed to minimize maintenance costs while providing acceptable levels of service.

1-102.4 Maximum Standards - It is the policy of Humboldt County that the design standards which are stated as singular values be interpreted not only as the minimum standards acceptable, but also as the maximum standards to be considered.

1-200 Design Function. Roadway design basically involves:

- (1) Proposing and planning new roads or improvements,
- (2) Preliminary feasibility and route studies,
- (3) Preliminary design,
- (4) Coordination with other functional departments,
- (5) Geometric, structural, and drainage system design, and
- (6) Coordination with those responsible for implementation of design.

This Manual will primarily deal with (5) above. The County's Roadway Classification System is included (Section 7) to assist those who propose and authorize new roads or improvements. Relative construction cost figures and a maintenance index are also included (Section 3) to assist in evaluating economic feasibility.

1-300 Authority - Legal and Organizational.

1-301 Roadway or Highway Design.

Existing Streets and Highways Codes and their amendments shall govern the design of County roadways or highways. These Codes delineate the laws concerning authority and procedures for all highway design effort as exercised by counties. Certain of these Codes will be quoted and referenced in this Manual for the purpose of promoting general understanding. The related Codes and their revisions are extensive and, therefore, will not be incorporated into this Manual. Interpretation of these Codes should be made by Humboldt County Counsel.

1-302 County Board of Supervisors.

According to Section 940 of the California Streets and Highways Code, the "Board of Supervisors shall have general supervision, management and control of the County highways."

Furthermore, in Section 943, Notes of Decisions, it states: "The Board of Supervisors has jurisdiction to determine whether a new road is necessary or not, and, if necessary, over what route it shall be laid out and constructed; and, in laying out public road, the Board exercises judicial functions. . ."

The Board also establishes design policy contained in this Manual.

1-303 Director of Public Works.

For purposes of this and later discussions, the title "Director of Public Works" is inclusive of those functions assignable or described as assigned to the "County Road Commissioner."

Section 2009 of the Streets and Highways Code states: "The Board of Supervisors shall act as the policy-making body with respect to County highway matters and shall, by appropriate action, establish the general policies to be followed by the Road Commissioner in the administration of his Department. The Road Commissioner shall administer his Department and carry out the general policies of the Board in conformity with the estimates of expenditures fixed in the budget as finally adopted by the Board, or as thereafter revised by appropriate action of the Board. The Commissioner shall employ such assistants and employees as may be necessary, in conformity with the budget and County policies and procedure, with respect to personnel and subject to the approval of the Board of the salary or other compensation to be paid. The Commissioner shall have sole supervision and jurisdiction over personnel and over the assignments of personnel engaged in work on County roads."

Furthermore, Section 1075 states: "The Board may have any work upon County highways done under the supervision and direction of the County Road Commissioner."