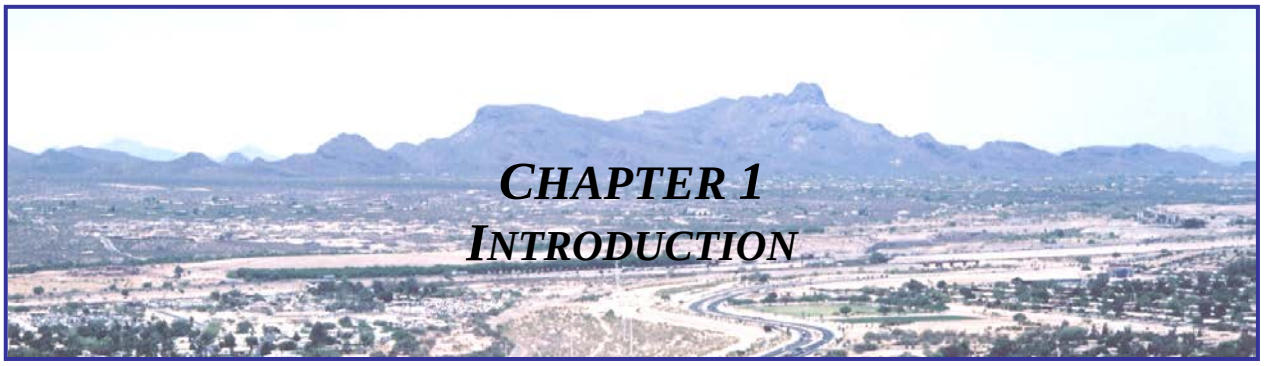


# *CHAPTER 1*
# *INTRODUCTION*

## 1.1 PURPOSE

The fourth edition of the *Pima County Roadway Design Manual* (RDM) was prepared by the Pima County Department of Transportation (DOT). The revisions to the manual, as reflected in this edition, are based on the additional experience of County and consultant designers who used the previous editions of the manual; changes in applicable standards and publications; and evolving policies and practices regarding the County's transportation infrastructure. The RDM is intended to serve both private developers constructing off-site improvements within a public right-of-way (Chapter 2); designers charged with developing roadway plans for the Department of Transportation; and those charged with reviewing the plans, specifications, and reports.

The primary purpose of the manual is to standardize the County roadway elements by ensuring that they meet both state and nationally accepted design criteria, as well as supplemental County criteria. The manual establishes the steps to be followed in the design process, including report and plan submittal requirements, to help further the consistency and efficiency of roadway implementation. All guidelines included in the manual are consistent with the Pima County *Community Participation and Mitigation Ordinance*, which is included at the end of this chapter as Appendix 1–A.

While the manual provides design guidance, it is not a substitute for professional judgment and close coordination with the County Project Manager during plan preparation.

## 1.2 USE

The focus of the RDM is on urban and rural roadway design. Pima County Project Managers and consultant firms shall use the manual to develop the scope of work for each individual roadway project – including the sequence of steps, the schedule, and the specific report and plan submittals required, to complete the work. Appendix 1-B provides a flow chart that identifies project components and processes associated with the roadway design process and illustrates how they relate to each other.

A project designated as an "environmentally sensitive roadway" by Pima County, or that meets the criteria of an environmentally sensitive roadway, must generally follow the process described in this manual as modified by specific assessment and mitigation techniques for biological

resources, cultural resources, and visual and aesthetic qualities provided in Chapter 4, "Environmentally Sensitive Roadway Design Guidelines," of this manual.

The RDM is not meant to serve as a substitute for professional judgment, nor minimize/eliminate close coordination with the project team members, partners, and stakeholders. At the onset, and throughout the project, the project team may identify the need to deviate from standards, codes, requirements, polices, or other formalized guidance and direction. In such cases, the project team shall review with and receive the approval of Pima County before using any alternative standard. Pima County will consider such requests and may, at its discretion, accept or reject them. Some of the more frequently used deviations/exceptions/exemptions include:

1. Elements of the Community, Participation and Mitigation Ordinance – Pima County Code, Chapter 10.56 (Refer to Section 3.4).
2. Public Art – The Board of Supervisors retains final authority to grant exemptions to the policy and procedures on a case-by-case basis. (Refer to Section 3.6)
3. Design Features - Various design features and elements contained in this manual (Refer to Section 3.17).

The project team shall be responsible for identifying the requirement/standard that is normally followed and being proposed as a deviation, exception, or exemption. The project team shall also identify the deviation/exception/exemption and complete the appropriate research to identify the requirements for obtaining said deviation/exception/exemption. This information shall then be reviewed with Pima County. If said deviation/exception/exemption is approved, the supporting documentation (e.g. – backup materials, reference information, concurrence by other partners and stakeholders) shall then be retained within the project files, with the the key elements of said deviation/exception/exemption captured within the DCR/EAMR.

## 1.3 CONTENTS

Chapter 2 of this manual presents the elements of design. Chapter 3 describes the process for developing plans, specifications, and estimates (PS&E) for new or improved County roadways. As noted in the previous section, Chapter 4 presents the methods and techniques to be used in assessing the effects of environmentally sensitive roadway projects on biological resources, cultural resources, and visual and aesthetic qualities.

The RDM chapters are comprised of multiple sections that address standards to be followed, methods for conducting technical analyses, and submittals for review and approval by the County. Each chapter is followed by the appendices that are cited in the chapter, with the exception of repeated appendices, which are included at the end of the chapter in which they are first cited.

The fourth edition of this manual provides detailed specifications regarding report formatting in an effort to ensure more consistency across reports and to facilitate more efficient reviews, along with details regarding the overall Project Management Process and when Value Engineering and Constructability Reviews should be completed; and expands on Chapter 3.3 Utility Construction and Design Requirements.

## 1.4 REFERENCED STANDARDS AND PUBLICATIONS

The manual is supported by state and nationally accepted documents on design standards and practices, including the most current edition of the American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*. These documents are referenced as appropriate throughout this manual.

## 1.5 UPDATES

Updates of this fourth edition of the RDM will be made available through the:

- Pima County Website
  http://dot.pima.gov/

- Pima County Department of Transportation
  Engineering Information Management Section
  201 North Stone Avenue, 5th Floor
  Tucson, Arizona 85701
  (520) 740-6332

# APPENDIX 1-A

***Pima County initially adopted a Community Participation and Mitigation Ordinance (1992-69) and has provided updates to the original adoption (Ordinance 2006-31). The results are reflected in Pima County Code, Sections 10.56.010 thru 10.56.300 and reflected below***

## PIMA COUNTY CODE - CHAPTER 10.56

### COMMUNITY PARTICIPATION AND MITIGATION

**Sections:**

**10.56.010 Purpose.**
**10.56.020 Applicability.**
**10.56.030 General considerations.**
**10.56.040 Project initiation.**
**10.56.050 Reserved.**
**10.56.060 Location report.**
**10.56.065 Design concept report.**
**10.56.070 Environmental assessment and mitigation report.**
**10.56.080 Construction documents.**
**10.56.090 Public participation.**
**10.56.100 Project mailing list.**
**10.56.110 Establishment of community advisory committees.**
**10.56.120 Public meetings.**
**10.56.130 Public opinion questionnaire.**
**10.56.140 Project status reports.**
**10.56.150 Report and executive summary for board of supervisors hearing.**
**10.56.160 Board of supervisors hearing notification.**
**10.56.170 Community advisory committee.**
**10.56.180 Community advisory committee-Membership.**
**10.56.190 Community advisory committee-Formation.**
**10.56.200 Community advisory committee-Functions and duties.**
**10.56.210 Community advisory committee-Permitted scope of review.**
**10.56.220 Community advisory committee-Matters not to be reviewed for change.**
**10.56.230 Community advisory committee-Meeting schedule.**
**10.56.240 Mitigation measures.**
**10.56.250 Reserved.**
**10.56.260 Roadway design criteria.**
**10.56.270 Advance right-of-way acquisition.**
**10.56.280 Operation and maintenance.**
**10.56.290 Exemptions and variances.**
**10.56.300 Annual report.**

**10.56.010 - Purpose.**

The purpose of this chapter is to ensure that, with respect to proposed major roadway improvement projects:

A. Adequate consideration is given to possible social, economic, environmental and transportation effects;
B. Appropriate consideration is given to reasonable alternatives;
C. Interested parties are afforded an opportunity to express their views early enough in the study process to influence the course of studies as well as the action taken; and
D. Decisions on projects are made in the overall public interest.

(Ord. 1992-69 § 1, 1992)

**10.56.020 - Applicability.**

A. Major projects. This chapter shall apply to proposed major roadway projects, including environmentally sensitive roadway projects, constructed by Pima County. This chapter shall be a policy statement and guide for proposed major roadway improvement projects and environmentally sensitive roadway projects constructed jointly by Pima County and other agencies or jurisdictions. For purposes of this chapter, the term "major roadway" means a roadway depicted on the Pima County Major Streets and Scenic Routes Plan and which is classified and functions as an arterial roadway. The term "environmentally sensitive roadway" refers to a transportation project within or crossing environmentally sensitive lands as determined by certain Sonoran Desert Conservation Plan conservation land system categories and/or designation as a Scenic and/or Historic Route, and/or location within or crossing a High or Moderate Archaeological Sensitivity Zone or a Priority Cultural Resource, as described in the *Pima County Roadway Design Manual*.

B. Minor projects. All minor projects shall include a minimum level of public notification and information. The Department of Transportation shall be responsible for determining the appropriate level of public outreach, participation and notification on a project by project basis. The following projects may be considered minor projects:
   1. Overlay or maintenance of an existing roadway;
   2. Addition of paved shoulder, bike lanes, or multi-use lanes to an existing roadway;
   3. Pavement widening of an existing roadway which does not increase the number of through traffic lanes;
   4. Traffic control or warning device installation projects;
   5. Changes or improvements to the right-of-way area outside the shoulder of an existing roadway;
   6. Drainage improvements; and
   7. Safety improvements.

   (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 2, 1992)

**10.56.030 - General considerations.**

To promote compatibility between proposed major roadway projects and surrounding properties, the following shall be considered for each proposed project:

A. Environmental Effects. Effects of the proposed project on the environment, including but not limited to noise, air quality and wildlife.
B. Neighborhood Impacts. Protection of existing neighborhoods and minimizing negative impacts from a proposed project.
C. Business Impacts. Protection of existing businesses and minimizing negative impacts from a proposed project.

D. Alternative Transportation Modes. Features for alternative modes of transportation as a part of the proposed project.
E. Cost. Cost and budget limitations incorporated throughout the design and construction of a project.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 3, 1992)

**10.56.040 - Project initiation.**
A project may be initiated after the desirability and necessity for the project is established by action of the Board of Supervisors or by inclusion of the improvement in the regional transportation plan adopted by the Pima Association of Governments. After corridor planning has occurred, the project design process shall begin with an environmental screening and inventory. If previous corridor planning has determined an analysis of alignment alternatives is required, this analysis shall be performed and documented in a location report. The location report shall be approved by the Board of Supervisors. An analysis of design alternatives and design criteria shall then be documented in a design concept report. In conjunction with the preparation of the design concept report, the appropriate measures to mitigate the impacts identified during the environmental screening shall be identified. These mitigation measures, as well as the environmental screening and inventory, shall be documented in an environmental assessment and mitigation report. Upon approval of the design concept report by the Director, and the environmental assessment and mitigation report by the Board of Supervisors, preparation of project plans beyond the design concept stage and specifications shall begin.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 4.1, 1992)

**10.56.050 - Reserved.**

**10.56.060 - Location report.**
A. If previous corridor planning has determined that a location report is required, the criteria of Section 10.56.060 shall apply. If a location report is not required, project design shall proceed with a design concept report as outlined in Section 10.56.065 and environmental assessment and mitigation report as outlined in Section 10.56.070.
B. A location report is a recommended final right-of-way alignment based on a comparative study of all reasonable alternative right-of-way alignments. The location report shall include a general overview of anticipated environmental impacts for each alignment. The location report shall contain the information specified in the *Pima County Roadway Design Manual*.
C. A location report is appropriate where (1) the proposed project is a new roadway on a new alignment, (2) the proposed roadway has virtually no existing right-of-way, or (3) there are significant alignment choices to be made between the identified project termination points. A location report is not appropriate where (1) the established or existing right-of-way is not of adequate width in accordance with the Major Streets and Scenic Routes Plan, (2) the alignment variations are contiguous with the existing road right-of-way and location, (3) additional right-of-way is needed only to accommodate minor alignment alterations or intersection widening.
D. After the location report is completed, the Board of Supervisors shall hold a public hearing to determine the final right-of-way alignment. At the conclusion of the hearing, the Board of Supervisors may approve any of the alternative alignments studied in the location report, may

order the preparation of a new location report, or may order that the project be terminated or delayed.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 4.3, 1992)

**10.56.065 - Design concept report.**
The design concept report shall identify the processes undertaken in developing a design concept for a roadway project, including the issues identified, design criteria employed, optional approaches considered, public input, and the recommended concept for design. The design concept report shall contain the information specified in the *Pima County Roadway Design Manual*. (Ord. 2006-31 § 1 (part), 2006)

**10.56.070 - Environmental assessment and mitigation report.**
A. An environmental assessment and mitigation report shall be prepared in conjunction with the design concept report.
B. The environmental assessment and mitigation report shall identify adverse impacts of the proposed project and shall provide recommendations for mitigation measures which may be undertaken to minimize the adverse impacts. The environmental assessment and mitigation report shall contain the information specified in the *Pima County Roadway Design Manual*.
C. After the environmental assessment and mitigation report is completed, the Board of Supervisors shall hold a public hearing to determine the mitigation components to be incorporated into the project. At the conclusion of the hearing, the Board of Supervisors may approve any of the mitigation measures considered in the environmental assessment and mitigation report, may order the preparation of a new environmental assessment and mitigation report, or may order that the project be terminated or delayed. Approval of mitigation components after the Board of Supervisors hearing on the environmental assessment and mitigation report shall constitute authorization to prepare construction documents and to acquire right-of-way for the project.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 4.4, 1992)

**10.56.080 - Construction documents.**
Construction documents shall be prepared in conformance with the action taken by the Board of Supervisors on the environmental assessment and mitigation report and the Transportation Director on the design concept report. Any deviations from the Board's or Director's actions shall be identified in a project summary report, which shall be sent to the Board with the request for permission to advertise for bids for the project.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 4.5, 1992)

**10.56.090 - Public participation.**
It is the policy of Pima County to promote public involvement and comment throughout the roadway development process, including during preparation of any location report, design concept report, or environmental assessment and mitigation report for major roadway projects constructed by Pima County. For minor projects, the Department of Transportation will evaluate the need for public involvement and notification on a project by project basis. Minimum levels of public notification shall be required for all projects.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5, 1992)

**10.56.100 - Project mailing list.**
The Pima County Department of Transportation shall maintain a project mailing list for each project subject to this chapter. The mailing list shall be used for all notifications required to be made under this chapter. The project mailing list shall consist of all owners of properties located within at least a one-half mile wide corridor along the alignment of the proposed project, based on the latest available records of the Pima County Assessor's Office. In addition, the list shall contain the names of all business property owners and tenants and the president or secretary of each homeowner and business association officially registered with Pima County adjacent to the project corridor. Throughout the project implementation process, this mailing list shall be expanded to include any additional resident and business who requests to be included in the mailings. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.1, 1992)

**10.56.110 - Establishment of community advisory committees.**
For each project subject to this chapter, a community advisory committee shall be established by the Department of Transportation to provide input and feedback to the Department of Transportation concerning any proposed location report, design concept report, or environmental assessment and mitigation report relating to the project. The community advisory committee shall function as set forth in Section 10.56.170.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.2, 1992)

**10.56.120 - Public meetings.**
A. A public meeting shall be held at least once during each of the following steps in project development:
   1. During the process of preparing a location report, if applicable;
   2. During the process of preparing a design concept report, and;
   3. During the process of preparing an environmental assessment and mitigation report.

   A general public invitation to each public meeting shall be posted on the Pima County Department of Transportation website and shall be given in a display ad published in at least one daily newspaper of general circulation in Pima County not less than fifteen and not more than thirty calendar days before the meeting. The website posting and display ad shall include a project location map and a description of the prominent features of the proposed project. Invitations to each public meeting shall be sent by mail to each person on the mailing list (see Section 10.56.100).
B. Public meetings shall be held in reasonable proximity to the proposed project site. Illustrations to assist the public to visualize the proposed project shall be available for public viewing at each public meeting, and Pima County staff and consultants shall be available to answer questions about the proposed project. The public shall have access to the illustrations, staff, and consultants for each public meeting. Following the public meeting, project illustrations may be posted on the Pima County Department of Transportation website in addition to being available upon request.
   (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.3, 1992)

**10.56.130 - Public opinion questionnaire.**
After each public meeting, a public opinion questionnaire shall be sent by mail to each person on the mailing list (see Section 10.56.100), soliciting public opinion concerning key design, environmental impact and mitigation issues. The questionnaire results shall be reported, along

with the number of questionnaires sent and the percentage of responses obtained, to the Board of Supervisors at or before the hearing on the location report or environmental assessment and mitigation report. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.4, 1992)

**10.56.140 - Project status reports.**
After appointment of a community advisory committee for a project, the Department of Transportation shall prepare and submit project status reports to the community advisory committee whenever there is a substantial change in the project status.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.5, 1992)

**10.56.150 - Report and executive summary for Board of Supervisors hearing.**
A location report or environmental assessment and mitigation report shall be delivered to the Board of Supervisors at least thirty days before the public hearing, along with an executive summary of the report prepared by or for the Pima County Department of Transportation. The executive summary shall explain whether and to what extent the opinions, requests and suggestions of the community advisory committee were incorporated in the location report or the environmental assessment and mitigation report.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.6, 1992)

**10.56.160 - Board of Supervisors hearing notification.**
Notice of Board of Supervisors public hearings shall be published in at least one daily newspaper of general circulation in Pima County not less than thirty and not more than forty-five calendar days before any Board of Supervisors public hearing required by this chapter. Notice of the public hearing shall also be sent to each person on the mailing list (see Section 10.56.100). The location report or environmental assessment and mitigation report to be considered at the hearing shall be available for public review at the time the hearing notice is published.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 5.7, 1992)

**10.56.170 - Community advisory committee.**
The function of each project's community advisory committee is to provide input and feedback to the Pima County Department of Transportation during the preparation of any location report, design concept report, or environmental assessment and mitigation report for the project, so that ample consideration is given to the concerns of those who are most directly affected by a project.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6, 1992)

**10.56.180 - Community advisory committee-Membership.**
Each community advisory committee shall consist of between five and fifteen members. Two to eight members shall own property or reside immediately adjacent to the proposed improvement. One to six members may own property or reside within an approximate one-half mile corridor but not immediately adjacent to the proposed improvement. Up to four members may own property or reside outside of the one-half mile corridor. Preference will be given to property owners, business owners, and representatives of homeowners' and merchants' associations.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.1, 1992)

**10.56.190 - Community advisory committee-Formation.**

To solicit volunteers for membership on a project's community advisory committee, notices shall be mailed to all whose names appear on the project mailing list (see Section 10.56.100), and an advertisement shall be posted on the Pima County Department of Transportation website and shall be published at least once in a newspaper of general circulation in Pima County not less than fifteen days before appointment of members. The notice shall contain a brief description of the proposed improvements and information on obtaining an application for membership on the community advisory committee. The notice shall specify the maximum number and composition of the community advisory committee, along with a deadline for receiving applications. The Director of the Department of Transportation shall appoint each community advisory committee. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.2, 1992)

**10.56.200 - Community advisory committee -Functions and duties.**

A. Community advisory committee members shall attend meetings as called by either the Department of Transportation or the chair, generally at regular intervals during project development through the end of construction.
B. The Department of Transportation shall provide community advisory committee members with training materials, reports, construction documents, and copies of this chapter, and shall explain operating procedures, duties and responsibilities of membership.
C. The community advisory committee shall elect a chairperson, who shall conduct meetings and supervise the preparation of the community advisory committee's written comments.
D. The community advisory committee shall review the location report, the design concept report, the environmental assessment and mitigation report, and the construction documents, based on the meeting schedule set forth in Section 10.56.230. The community advisory committee shall prepare written comments containing the committee's recommendations concerning the location report, the design concept report, the environmental assessment and mitigation report, project summary report and any other matter listed in Section 10.56.210. The community advisory committee's written comments may suggest a priority for elements of the proposed improvements, including the committee's priorities for allocation of mitigation resources available to the project.
E. The community advisory committee's written comments shall be presented to the Department of Transportation at least forty-five days before the Board of Supervisors public hearing on the location report or environmental assessment and mitigation report. A copy of the community advisory committee's written comments shall be presented to each member of the Board of Supervisors with the location report or environmental assessment and mitigation report (see Section 10.56.150).
F. After construction, the community advisory committee shall provide a written post-construction evaluation of the project. The evaluation shall analyze whether the construction has achieved the mitigation goals identified in the environmental assessment and mitigation report.

(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.3, 1992)

**10.56.210 - Community advisory committee -Permitted scope of review.**

The community advisory committee may review any aspect of the following items, including mitigation methods, except as limited by Section 10.56.220:

A. The location report, which identifies the roadway location within a roadway corridor;

B. The design concept report, which documents the analysis of design alternatives;
C. The environmental assessment and mitigation report, including but not limited to:
   1. Environmental factors, such as:
      a. View shed treatments;
      b. Landscaping theme;
      c. Wildlife crossings;
      d. Ecological resources; and
      e. Cultural and historic resources,
   2. Neighborhood factors, such as:
      a. Noise abatement methods;
      b. Streetscape themes, including public art;
      c. Architectural treatments;
      d. Street lighting;
      e. Access control and mitigation; and
      f. Other neighborhood impacts,
   3. Business factors, such as:
      a. Access control and mitigation;
      b. Signage;
      c. Visibility; and
      d. Construction impacts,
   4. Alternative modes considerations, such as:
      a. Pedestrian facilities, including sidewalks, trails and paths;
      b. Equestrian crossings; and
      c. Alternative travel modes (for example, public bus and bicycle facilities),
   5. Cost considerations.

   (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.4, 1992)

**10.56.220 - Community advisory committee -Matters not to be reviewed for change.**

The community advisory committee may request information regarding the following, but shall not alter these requirements or their applicability:

A. Pima County ordinances;
B. Pima County Department of Transportation engineering design standards and procedures;
C. Federal Highway Administration, Arizona Department of Transportation Standards, American Association of State Highway Transportation Officials, and the Institute of Traffic Engineers design criteria, and other generally accepted engineering and safety principles and standards;
D. Pima County regional long range transportation plan roadway designations;
E. Pima County Department of Transportation adopted typical roadway cross sections;
F. Pima County Department of Transportation design and posted speed limit standards and procedures;
G. Pima Association of Governments traffic projection modeling;
H. Pima County capital improvements program funding allocation;
I. Federal and state historic, cultural, and archaeological site protection requirements;
J. Federal and state endangered species protection requirements;
K. Federal and state wildlife habitat protection requirements;
L. The Americans With Disabilities Act.

(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.5, 1992)

**10.56.230 - Community advisory committee -Meeting schedule.**
The following meeting schedule is recommended for each community advisory committee. Progress drafts of the report or documents under consideration shall be available prior to each respective meeting:

| Items Under Consideration | Suggested Number of Meetings | Community Advisory Committee Meeting Schedule |
|---|---|---|
| Location report (if applicable) | 3 | A meeting when the draft report is initiated, one when it is completed, and one when the final report is approved. |
| Design concept report | 2 | A meeting when the draft report is initiated, and one when the final report is completed. |
| Environmental assessment and mitigation report | 3 | A meeting when the draft report is initiated, one when it is completed, and one when the final report is approved. |
| Construction documents | Optional | As the construction documents are being prepared, the project team shall provide the community advisory committee with reports identifying deviations from the approved environmental assessment and mitigation report. The committee may meet as it deems necessary to review the construction documents based upon this report. |
| Post-construction | 1 | Upon completion of the project |

(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 6.6, 1992)

**10.56.240 - Mitigation measures.**
General and specific impact mitigation measures as approved by the Board of Supervisors as a result of the public hearing on the environmental assessment and mitigation report shall be utilized to mitigate adverse impacts of each major roadway project. Mitigation includes measures to (1) avoid the impact altogether by not taking a certain action or selected elements of a proposed action, (2) minimize impacts by limiting the degree or magnitude of the action and its implementation, (3) rectify the impact by repairing, rehabilitating or restoring the affected environment, (4) reduce or eliminate the impact over time by preservation and maintenance activities during the life of the action, or (5) compensate for the impact by replacing or providing substitute resources or environments. The following mitigation measures shall be implemented for each major roadway project covered by this chapter:

A. Environmental.
   1. Preservation of Environmentally or Ecologically Sensitive Areas. Where possible, the location of major roadway projects shall avoid areas of significant environmental and ecological sensitivity. Where major roadway projects are adjacent to areas of unique environmental or ecological sensitivity, acquisition in fee simple, acquisition of

development rights, or conservation easements may be proposed by the appropriate environmental assessment and mitigation report (see Item 5 below for additional requirements).

2. Landscaping. All medians and right-of-way areas on major roadway projects shall be landscaped with drought-resistant, low pollinating, preferably native plants. Plant species shall be listed as permissible pursuant to the landscaping requirements of the Pima County zoning code. The landscaping theme of each major roadway project shall be compatible with the native landscape through which the roadway passes. Installation of landscaping shall begin not later than six months after the formal completion date of the roadway project.
3. Dust Abatement. Curbs or paved roadway shoulders shall be provided adjacent to through traffic lanes to minimize air borne dust generated by vehicular traffic.
4. Scenic Route Designations. A visual impact analysis shall be included in any environmental assessment and mitigation report prepared for improvements on major roadway projects designated as scenic routes.
5. Environmentally Sensitive Roadways. Roadways are defined as Environmentally Sensitive Roadways (ESR) if they are located within or cross (a) unique ecologically or culturally sensitive lands as determined by the Sonoran Desert Conservation Plan, (b) High or Moderate Archaeological Sensitivity Zones or Priority Cultural Resources, or (c) if the roadways are identified as Historic or Scenic Routes. Projects that are defined as ESR shall be designed and constructed to minimize disturbance to the area resources. Additional environmental resource assessment and mitigation procedures are required as defined in the *Pima County Roadway Design Manual*.

B. Neighborhood.

1. Area Adjoining Roadway. The primary purpose of the area between the roadway improvements and the right-of-way line shall be to mitigate adverse effects of highway development on adjacent land uses and provide an aesthetically pleasing environment. Therefore, the following uses are permitted: installation of noise walls, screens or berms; landscaping; public art; facilities for public bus, pedestrian, equestrian and/or bicycle use; underground utilities; drainage system components, safety appurtenances and environmental mitigation measures. Overhead utilities are permitted only when the cost of placing the utilities underground causes the project budget to be exceeded or when the voltage exceeds fourteen thousand volts. Where native vegetation exists, a design goal shall be to conserve and incorporate this vegetation within the project landscaping plan.
2. Neighborhood Traffic Intrusion. Major roadway projects shall be designed to minimize neighborhood traffic intrusion. Where local street connections offer a bypass or shortcut between major roadway projects which in the opinion of the Board of Supervisors has a substantial adverse impact on neighborhood traffic, such streets shall be closed to through traffic or otherwise modified to minimize traffic intrusion.
3. Noise Abatement. Noise abatement shall be incorporated into the project design to protect inhabited residential or other sensitive land uses from roadway traffic noise. Noise abatement measures shall be considered for these land uses when existing or design year projections of exterior traffic noise measurements exceed an hourly A-weighted sound level of sixty-seven dBA or when there is an increase in noise measurements of fifteen dBA or greater. The preferred method of noise abatement shall be the construction of noise barrier walls. Other methods such as rubberized asphalt,

berms, and/or landscaping may be utilized if the cost to Pima County does not exceed the cost of noise barrier walls.

C. Businesses.
   1. Business Assistance Program. Pima County shall develop a Business Assistance Program to assist businesses throughout the design and construction phases of roadway projects. The goals of this program are to help businesses maintain profitability throughout roadway projects, improve communication between businesses and Pima County Department of Transportation, and to minimize and mitigate the impacts associated with roadway projects.
   2. Information Program. Pima County shall implement an information program to provide project information to business owners and tenants throughout the design and construction phases of roadway projects.
   3. Access Control. Major roadways shall be designed and constructed to maintain and control safe and convenient access to businesses and parking. During construction, at least one access driveway shall be maintained at all times.
   4. Signage and Visibility. Major roadways shall be designed to maintain business visibility and signage, including careful placement of street trees, vegetation, utility and other structures that could impact visibility. During construction, additional business signage shall be provided to improve visibility.

D. Alternative Modes.
   1. Bicycle and Pedestrian Considerations. The outside lane width for any urban (curbed) and rural (noncurbed) major roadway project shall be per the standards specified in the *Pima County Roadway Design Manual* to accommodate bicycles and other uses. Physically separated bicycle paths shall be examined as a design alternative where right-of-way widths are two hundred feet or greater and side street and driveway connections are limited. Sidewalks shall be provided where warranted by pedestrian travel, and special consideration shall be given to pedestrian or bicycle crossings with major routes. Pedestrian overpasses/underpasses shall be considered for school crosswalks or school zones for existing public or private schools adjacent to any major route.
   2. Transit Vehicles. The project design shall consider mass transit vehicle pullouts if bus or other mass transit services are available or planned along the proposed improvement.
   3. Park and Ride Facilities. To facilitate carpooling, ridesharing and mass public transportation ridership, additional right-of-way shall be considered in the vicinity of major intersections of major roadway projects for the development of future park and ride facilities. Park and ride facilities shall be convenient and screened with landscaping. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 7.1, 1992)

**10.56.250 - Reserved.**

**10.56.260 - Roadway design criteria.**

The roadway design criteria for any major roadway project covered by this chapter shall be specified in the current *Pima County Roadway Design Manual*.
(Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 7.2, 1992)

**10.56.270 - Advance right-of-way acquisition.**
To minimize displacement, disruption and right-of-way acquisition costs, and to maximize the effectiveness of mitigation measures, advance right-of-way acquisition may be proposed in the environmental assessment and mitigation report, per the current procedures used by Real Property Services. Where funding is available, priority for consideration of advance acquisition shall be given to single-family residences with sole, direct access to major roadway projects for hardship and protective reasons, and to real property for which the inevitability of acquisition affects its marketability. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 8, 1992)

**10.56.280 - Operation and maintenance.**
Except as otherwise agreed to in a maintenance agreement duly authorized by the Board of Supervisors, all major roadway project improvements including noise walls, public art, landscape medians, and other similar features shall be maintained as part of Pima County's normal maintenance process. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 9, 1992)

**10.56.290 - Exemptions and variances.**
A. At any time before or during consideration of a proposed improvement, the Board of Supervisors may exempt the project or any portion of it from any or all procedural or substantive requirements of this chapter. The Board of Supervisors may grant a variance from the specific application of any substantive requirement of this chapter where the application of the provision will impose an unnecessary hardship on a property owner or on the general public.
B. An exemption or variance may be granted by the Board of Supervisors as part of the approval of the final road alignment (see Section 10.56.060) or the mitigation components to be incorporated into the project (see Section 10.56.070). In that case, the public hearing notice required for consideration of the location report or the environmental assessment and mitigation report shall identify each recommended alterative which constitutes an exemption or waiver from the requirements of this chapter. No further notice shall be required.
C. If not granted as part of the approval of the final road alignment or the mitigation components to be incorporated into the project, an exemption or variance may be granted after a public hearing by the Board of Supervisors, at least one notice of which shall be published no less than fifteen days before the hearing in a newspaper of general circulation in Pima County.
(Ord. 1992-69 § 10, 1992)

**10.56.300 - Annual report.**
Each year the Director of the Department of Transportation shall prepare a report to the Board of Supervisors regarding the application, use and effectiveness of this chapter. The annual report shall contain a list of the projects to which this chapter was applied in the past year, the status of each project, estimated costs of each project, and any suggested modifications to the procedures and processes of project implementation which would improve the effectiveness of this chapter. (Ord. 2006-31 § 1 (part), 2006; Ord. 1992-69 § 11, 1992)

# APPENDIX 1-A
# EXHIBITS

1. Location Report Contents
2. Environmental Assessment and Mitigation Report Contents

**Exhibit 1**

# LOCATION REPORT

## Table of Contents

I. Introduction
   A. Description of Proposed Roadway Corridor
II. Identification of Alternative Locations
   A. Description of Roadway Alternatives
III. Comparative Impact Assessment and Analysis
   A. Preliminary inventory of existing data
   B. Comparative impact assessment
   C. Evaluation of comparative impact assessment
   D. Conclusions
IV. Recommendation
   A. Proposed Action
   B. Identification of potential impacts of preferred alignment requiring further analysis in the Environmental Assessment and Mitigation Report
      1. Environmental
      2. Neighborhood
      3. Alternative Modes
      4. Cost
V. Exhibits
   A. Roadway Alternatives
   B. Graphic illustrations

* An Executive Summary will be prepared which can be inserted at the beginning of this report.

**Exhibit 2**

**ENVIRONMENTAL ASSESSMENT AND MITIGATION REPORT**

**Contents**

Executive Summary

Table of Contents (Chapters, Sections, List of Exhibits, Appendices)

Abbreviations

1.0 Background

1.1 Project Cost and Funding

1.2 Direction by Board of Supervisors

1.3 Project Design Process

2.0 Project Purpose And Need

3.0 Project Setting

4.0 Proposed Project

5.0 Environmental Screening

6.0 Environmental Assessment And Mitigation

*6.1 Natural/Physical Environment*

6.1.1 Biological Resources*

6.1.2 Drainage/Section 401/404

6.1.3 Floodplain

6.1.4 Air Quality

6.1.5 Noise

6.1.6 Utilities

6.1.7 Hazardous Materials

6.1.8 Construction

6.1.9 Historic/Cultural Resources*

6.1.10 Visual Resources*

*6.2 Neighborhood/Social Environment*

6.2.1 Right-of-Way Acquisition and Displacement

6.2.2 Temporary and Permanent Access and Parking Impacts

6.2.3 Neighborhood Disruption

6.2.4 Parks and Recreational Areas

6.2.5 Consistency with Other Plans

7.0 Agency Coordination

8.0 Public Participation

- 8.1 Public Participation Plan
- 8.2 Community Advisory Committee
- 8.3 Public Meetings
- 8.4 Community Concerns

9.0 Conclusion and Recommendations

10.0 References

Tables

Figures

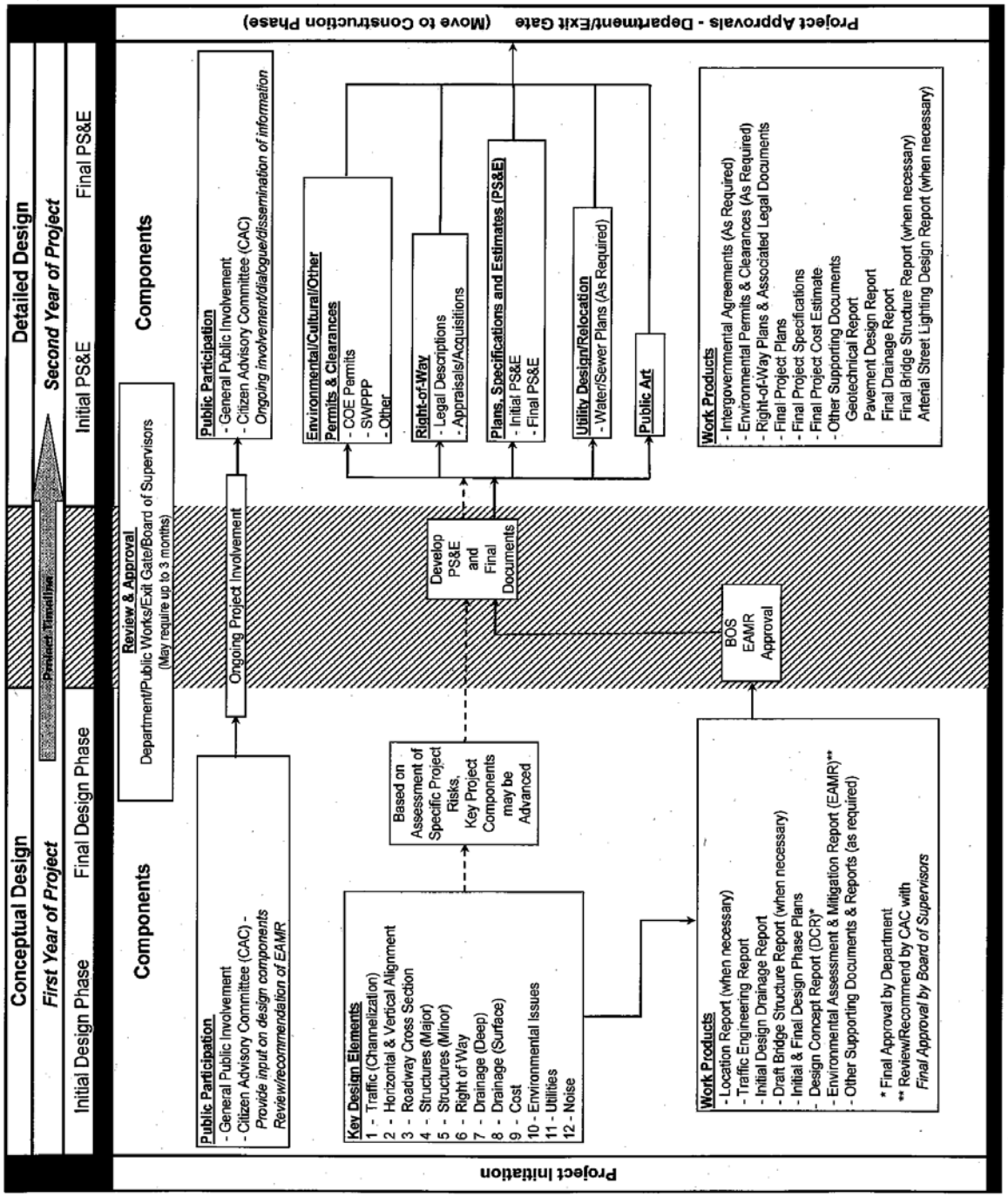
Project Documents

**Exhibits (as applicable)**

- Location Map
- Aerial Photo (project limits and prominent physical features)
- Existing Conditions Photos (captioned)
- Noise Measurement Location Map
- View Analysis Location Map and Photos of Analysis Locations
- Existing Land Use Map
- Alternative Transportation Routes Map (e.g., bus routes, sidewalks, and designated trails)
- Park and Recreational Facilities Map
- *Optional:* Photo simulations of the proposed project
- *Other as appropriate*

**Appendices (as applicable)**

* If project is designated as an Environmentally Sensitive Roadway, see Chapter 4 for information on conducting this assessment.

**APPENDIX 1-B**

**PIMA COUNTY DESIGN PROCESS FLOWCHART**