

# Chapter One

## ORGANIZATION AND FUNCTIONS (Program Development)

BUREAU OF DESIGN AND ENVIRONMENT MANUAL



**Chapter One**  
**ORGANIZATION AND FUNCTIONS**  
**(Program Development)**

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# Chapter 1

## ORGANIZATION AND FUNCTIONS (Program Development)

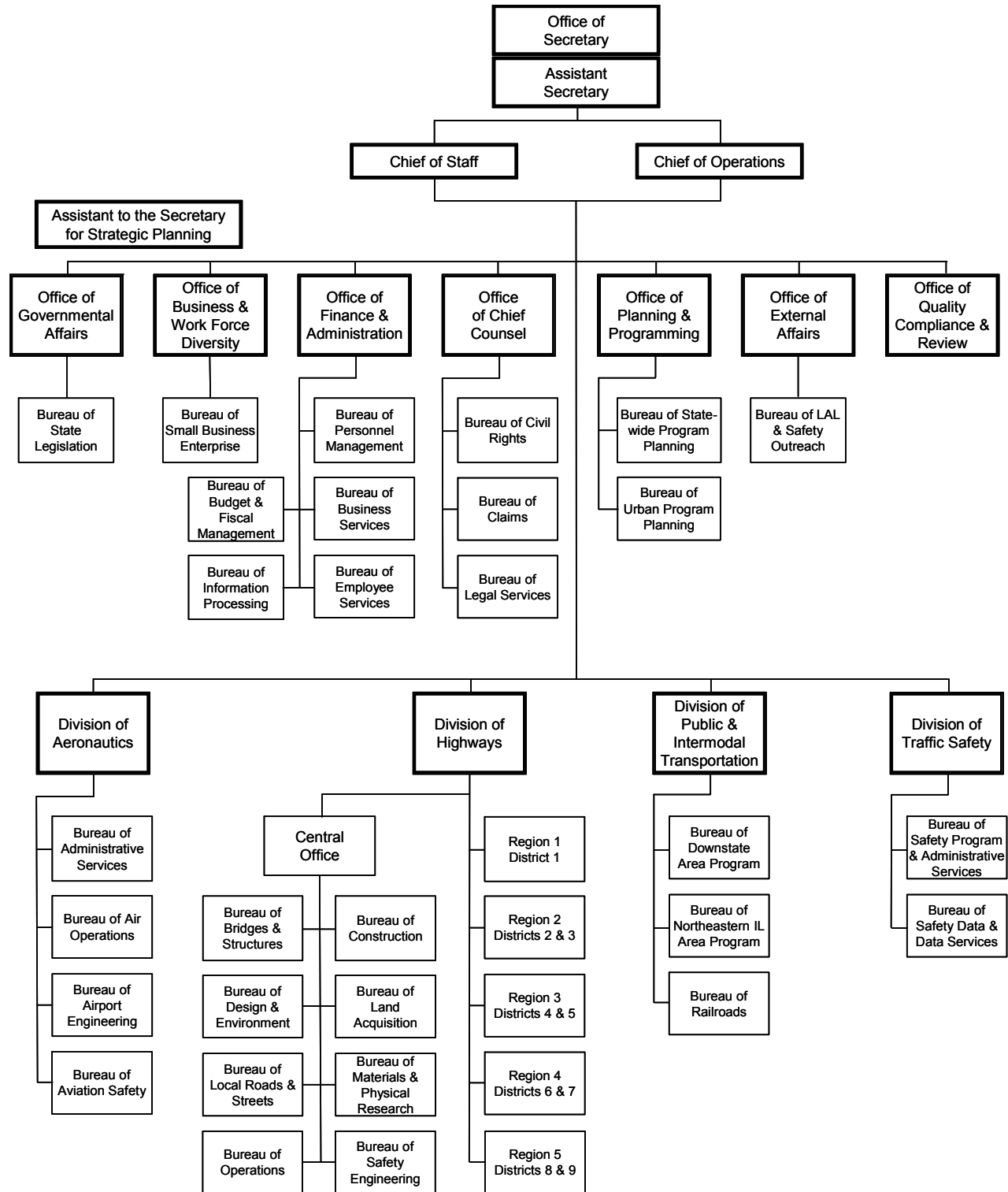
Chapter 1 discusses the organization and functions of units in the Division of Highways within the Illinois Department of Transportation involved with program development. The chapter briefly discusses:

- each section within the Bureau of Bridges and Structures,
- each section within the Bureau of Land Acquisition,
- function of the Bureau of Safety Engineering, and
- functional units within each section of the Bureau of Design and Environment.

This Chapter is intended to provide the user with a general direction for which unit within Program Development can provide additional information for specific needs not covered in the Manual. The *IDOT Organization and Functions Manual* presents a brief discussion on the many other functional units within the Illinois DOT.

### 1-1 ORGANIZATIONAL CHART

Figure 1-1.A presents the organization of the Illinois Department of Transportation.



**IDOT ORGANIZATION**

**Figure 1-1.A**

## 1-2 DIVISION OF HIGHWAYS

The Division of Highways is responsible for developing, maintaining, and operating the State highway system in a safe, timely, efficient, and economical manner. The central bureaus of the Division are responsible for developing policies, procedures, standards, and guidelines to accomplish the Department's highway system improvement objectives. The central bureaus' function is to monitor district programs to ensure Statewide uniformity of policy interpretation and compliance and to ensure program coordination with Federal, State, and local agencies.

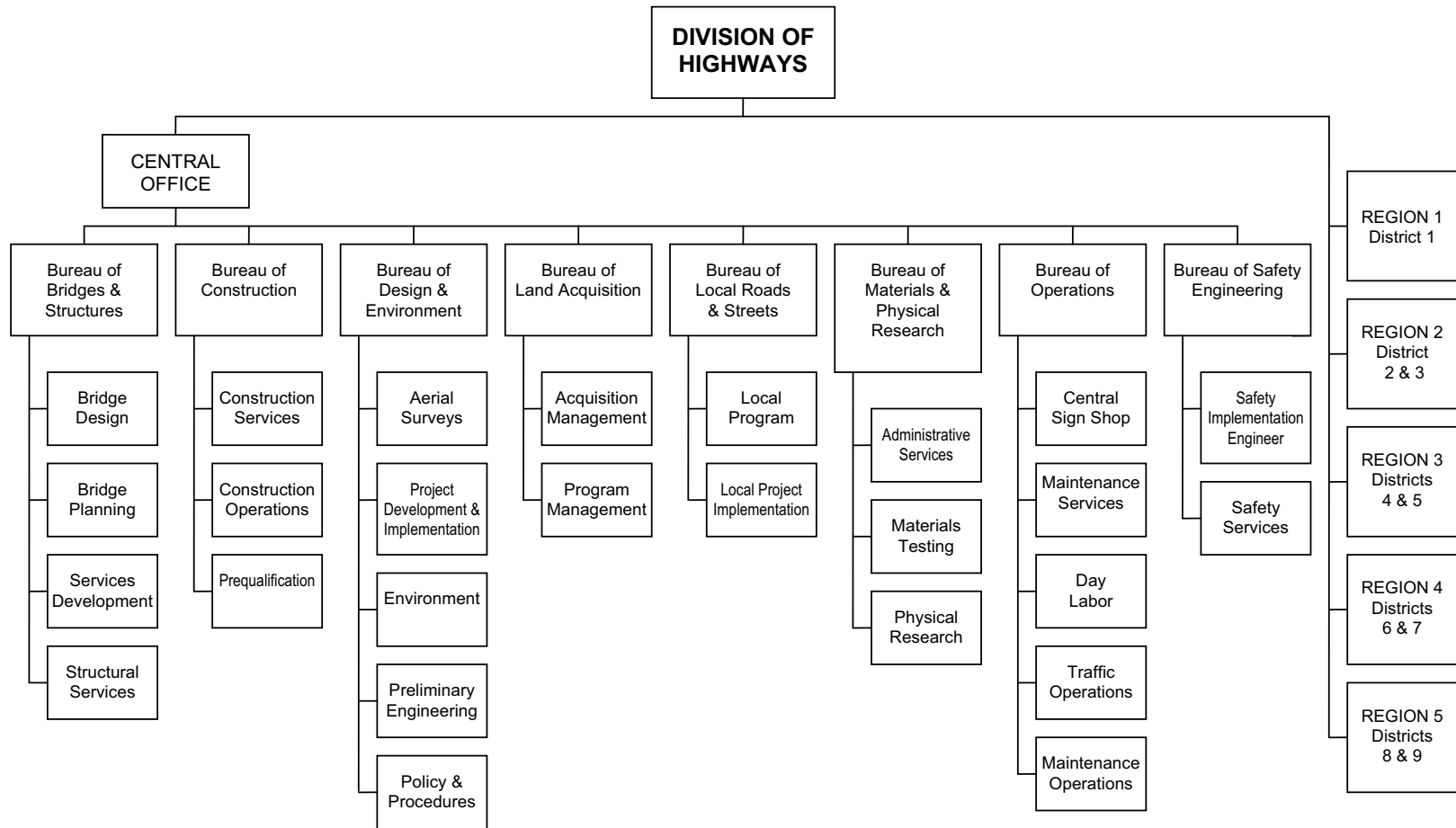
The mission of the Division of Highways is to:

*"plan, design, construct and maintain a safe highway system with a diverse and professional work force, within available resources, and to the highest nationwide standards for all of the citizens of Illinois."*

The underlying goals for this mission are to:

- Preserve and improve Illinois' integrated highway system to make it the nation's safest and most efficient.
- Respect concerns for the environment and quality of life in planning, constructing, and maintaining that highway system.
- Perform all activities in a professional, courteous, and service-oriented manner.
- Pursue the use of innovative technologies which will provide high-quality facilities while reducing life-cycle costs.
- Coordinate with elected officials, the public, local governments, and other governmental agencies in developing highway improvements.
- Hire, train, and retain a top quality, highly motivated, professional work force by providing a stimulating and rewarding work environment.
- Coordinate with industry and professional associations to develop standards, specifications, and policies to provide safe and cost-effective facilities.

Figure 1-2.A presents the organization of the Division of Highways.



DIVISION OF HIGHWAYS

Figure 1-2.A

### 1-3 PROGRAM DEVELOPMENT

Program Development within the Division of Highways includes the central Bureaus of Bridges and Structures, Design and Environment, Land Acquisition, and Safety Engineering. These bureaus ensure that the development of central programs and activities will support an efficient highway program implementation in the districts. The overall objective is to ensure that highway improvement projects are advanced to the letting stage in a cost-effective and timely manner.

Section 1-3 discusses the functional responsibilities of the Bureau of Bridges and Structures, Bureau of Land Acquisition, and the Bureau of Safety Engineering. These bureaus have prepared manuals to provide detailed information on their responsibilities and the Department policies they administer. See Chapter 60 for a brief description of these manuals. Section 1-4 discusses the functions of the Bureau of Design and Environment.

#### 1-3.01 Bureau of Bridge and Structures

The Bureau of Bridges and Structures is responsible for developing the structural design policies, practices, and criteria for the Department. The Bureau:

- provides the detailed planning and design of highway structures,
- develops bridge standards,
- performs preliminary engineering for structural elements,
- prepares highway structure plans,
- conducts special bridge and structure studies,
- inspects structural steel,
- reviews consultant structure plans for structural adequacy, and
- provides review and guidance for local agency project development.

##### 1-3.01(a) **Bridge Design Section**

The Bridge Design Section is the Department's focal point for the preparation of all in-house structural details. The Section has the day-to-day responsibility to develop structural plans from the general plan and elevation to PS&E advertisement. The specific functional responsibilities of the Bridge Section are to:

- prepare in-house structural designs for all types of highway bridges (i.e., longer than 20 ft (6 m)), including:
  - + the determination of applicable loads to the bridge;
  - + the design of reinforced concrete superstructures;
  - + the design of prestressed concrete superstructures;
  - + the design of structural steel superstructures;

- + verifying geometric criteria for the structure (e.g., bridge widths, vertical clearances);
- + the design of substructure units and foundations;
- + the design of bridge accessories (bridge rails, sidewalks, curbs, fencing, etc.);
- + the rehabilitation of existing bridges (e.g., bridge deck rehabilitation, seismic retrofit); and
- + coordination with other Department preconstruction functions (environment, right-of-way, roadway design) as necessary for project development;
- prepare in-house designs for other structures including box culverts, retaining walls, sound barriers, etc.; and
- prepare all necessary PS&E elements for structural items, including construction plans, special provisions, quantities, and engineering cost estimates.

In addition to its responsibilities for in-house designs, the Bridge Design Section performs a variety of other services. These include:

- in coordination with the Consultant Unit, reviewing structural plan details prepared by consultants;
- reviewing computer programs for structural applications and evaluating new programs for potential Department applications;
- developing design procedures and structural theories;
- maintaining state-of-the-technology in bridge design and materials through review of AASHTO, TRB, FHWA, etc., publications;
- investigating and implementing revisions to the:
  - + *IDOT CADD Manual*,
  - + *IDOT Bridge Manual*,
  - + *IDOT Standard Specifications for Road and Bridge Construction* (structural elements),
  - + *IDOT Culvert Manual*, and
  - + *IDOT Prestressed Concrete Manual*.
- representing the Department in litigation related to structural issues;

- providing technical support for structural designs for projects on non-State facilities which are funded by State and/or Federal dollars;
- serving as a technical resource in structural designs for local government projects; and
- participating as needed in the field construction of structural elements, including:
  - + in coordination with the Structural Services Section, reviewing and approving construction shop drawings, erection drawings, and falsework drawings;
  - + performing periodic field construction inspections; and
  - + reviewing and commenting on construction change orders when requested by the Bureau of Construction.

### **1-3.01(b) Bridge Planning Section**

The responsibilities of the Bridge Planning Section include:

- providing the preliminary engineering functions for bridge design which include:
  - + soils analysis (e.g., classification, bearing capacity);
  - + substructure and foundation design (e.g., piers, bents, piles, footings, abutments);
  - + bridge hydraulics (e.g., hydrological calculations, ice/debris impacts, freeboard, hydraulic calculations); and
  - + for existing bridges, determining the most economical method of rehabilitation or replacement;
- developing and preparing type, size, and location plans for bridges and structures to establish the structure type and determine related policies and procedures;
- reviewing Bridge Condition Reports;
- evaluating proposed structural engineering projects and designating design plan preparation as either in-house or by consultants;
- assessing the qualifications of consultant engineers, approving consultant proposals, and monitoring consultant compliance with contract provisions;
- assisting in programming and monitoring the Department's Multiyear Bridge Program;
- conducting special engineering studies and reports;
- preparing and maintaining the Department's *Drainage Manual*; and

- for roadway drainage, serving as a technical resource for in-house roadway design projects.

### **1-3.01(c) Services Development Section**

The functions of the Services Development Section include:

- managing the Bureau's data processing and automation equipment systems;
- coordinating budget contracts;
- providing administrative, personnel, and training services for the Bureau;
- coordinating word processing activities; and
- maintaining and enhancing the automated filing and record retrieval system for project files, personnel files, structural design library, etc.

### **1-3.01(d) Structural Services Section**

The responsibilities of the Structural Services Section include:

- managing the Illinois Bridge Inspection Program to ensure compliance with the National Bridge Inspection Standards (NBIS), including:
  - + coordinating the inspection of all bridges open to the public in Illinois;
  - + conducting the inspection of all structures over major waterways;
  - + providing guidance to Department, local agency, and consultant bridge inspectors;
  - + managing and using the collected data;
  - + developing and maintaining a written guide for bridge inspectors and providing training;
  - + preparing and processing Structure Inventory and Appraisal (SI&A) data for all public bridges in the State; and
  - + maintaining an inventory on the structural and functional condition of all public bridges in Illinois;
- providing the Department's structure ratings, structural analyses, permit load approvals and investigations, and load limit designations on all bridges and structures within the State;

- administering and managing the enhancement and coordination of the Illinois Bridge Management Systems (BMS), including:
  - + recommending bridge improvements based on the findings from the Illinois Bridge Inspection Program;
  - + incorporating cost-effective considerations into project prioritization; and
  - + for HBRRP projects, monitoring project implementation;
- conducting the Department's investigation and evaluation of damaged bridge members from fatigue cracking, deterioration, or vehicular crashes and preparing or approving plans for corrective action;
- approving all fabrication shop plans for bridge and traffic structures;
- regulating material usage and utilization of new fabrication and welding processes;
- inspecting the fabrication, welding, and nondestructive testing of weldments for steel bridges and sign structures;
- developing policies and procedures for paint and lead paint containment specifications and guidelines to achieve the effective maintenance of State highway bridges;
- determining the safe load-carrying capacity of all State-maintained structures;
- preparing and maintaining the *Structural Services Manual* and the Sign Structures Manual; and
- providing administrative and technical support to local agencies to assist them in the development of bridge construction, rehabilitation, and replacement projects and ensuring that measures are implemented to evaluate the safety of local agency bridges, including:
  - + reviewing Bridge Condition Reports, Preliminary Bridge Design, and Hydraulic Reports;
  - + inspecting and rating bridges to determine load-carrying capacity;
  - + reviewing load-carrying capacity analyses and bridge posting recommendations prepared by consulting engineers;
  - + reviewing local agency construction and permit loadings;
  - + reviewing and developing bridge repair details;
  - + participating in process reviews to ensure compliance with NBIS requirements;

- + providing specific information for NBIS inspection scheduling to minimize NBIS inspection delinquencies;
- + developing policies and procedures to provide local agencies with efficient and effective methods of complying with NBIS inspection and evaluation requirements; and
- + presenting training classes to provide information on basic NBIS inspection procedures, scour evaluation, and bridge repair methods.

### **1-3.02 Bureau of Land Acquisition**

The Bureau of Land Acquisition is responsible for developing policies for the Statewide land acquisition program. This program includes the functions of appraisal, negotiation, acquisition, relocation assistance, property management, right-of-way engineering, and signboard and junkyard control. The Bureau is responsible for developing and administering standards of review for operational performance and for reviewing all right-of-way expenditures.

#### **1-3.02(a) Acquisition Management Section**

The Acquisition Management Section develops and implements Statewide policies and procedures to provide for an effective and systematic Statewide land acquisition program. The section also provides guidance and assistance to the districts, which implement land acquisition activities, in accomplishing right-of-way programs, and it conducts compliance reviews of district land acquisition activities. The land acquisition process includes the following functions:

- appraisal,
- negotiations,
- relocation assistance/property management, and
- acquisition/condemnation.

In addition, the Acquisition Management Section is responsible for:

- reviewing legislation proposed by the General Assembly to determine the impact on land acquisition policies;
- administering the statewide signboard and junkyard control program; and
- monitoring and reporting on land acquisition projects to clear for lettings.

#### **1-3.02(b) Program Management Section**

The functions of the Program Management Section include:

- developing policies and procedures for effective project/program management of all land acquisition activities and monitoring related program accomplishments;
- controlling, evaluating data, and developing procedures for the operation of the Land Acquisition System (LAS) and PC-based systems;
- developing policies and procedures on right-of-way engineering and special waste issues;
- administering the asbestos survey contract;
- preparing material and providing assistance in training programs for land surveying;
- reviewing all right-of-way engineering documents in accordance with Department policies, Federal and State laws, and statutory requirements;
- providing programming of Federal-aid projects in accordance with the approved procedures to secure Federal participation;
- preparing project agreements and modified project agreements for the reimbursement of Federal funds;
- preparing vouchers and payment schedules for the purchase of right-of-way and related incidental expenditures;
- developing methods and procedures to maintain records for the accountability of land acquisition expenditures;
- providing administrative support services including budgetary, procurement, and clerical activities; and
- maintaining the central filing system including microfilming of documents for permanent safekeeping.

### **1-3.03 Bureau of Safety Engineering**

The Bureau of Safety Engineering is responsible for providing the Department with coordinated and focused engineering safety efforts for both State and local roadways. The Bureau of Safety Engineering performs the following activities:

- develops, maintains, and implements the Illinois Comprehensive Safety Plan;
- develops roadside safety policies regarding roadside hardware and appurtenances used in contract plans;
- develops work zone traffic control policies and requirements to be included in contract plans;

- administers the Highway Safety Improvement Program;
- develops training, policies, and procedures to enhance safety on Illinois roadways; and
- analyzes trends in fatal and serious injury crashes to provide data-driven recommendations and strategies.

## **1-4 BUREAU OF DESIGN AND ENVIRONMENT**

The Bureau of Design and Environment (BDE) is responsible for developing standards, specifications, and policies for the State highway system to provide an economical, safe, and comfortable movement of people and goods within the State. BDE develops highway standards and provides support services for district highway design programs; coordinates and prepares Federal-aid program documents; and processes plans and contract documents through the letting and contract award stage. In addition, BDE is responsible for developing policies for the preparation, coordination, final review, and approval of project location studies and environmental documents.

Figure 1-4.A presents the organization of the BDE.

### **1-4.01 Aerial Surveys Section**

#### **1-4.01(a) Surveys and Photo Services Unit**

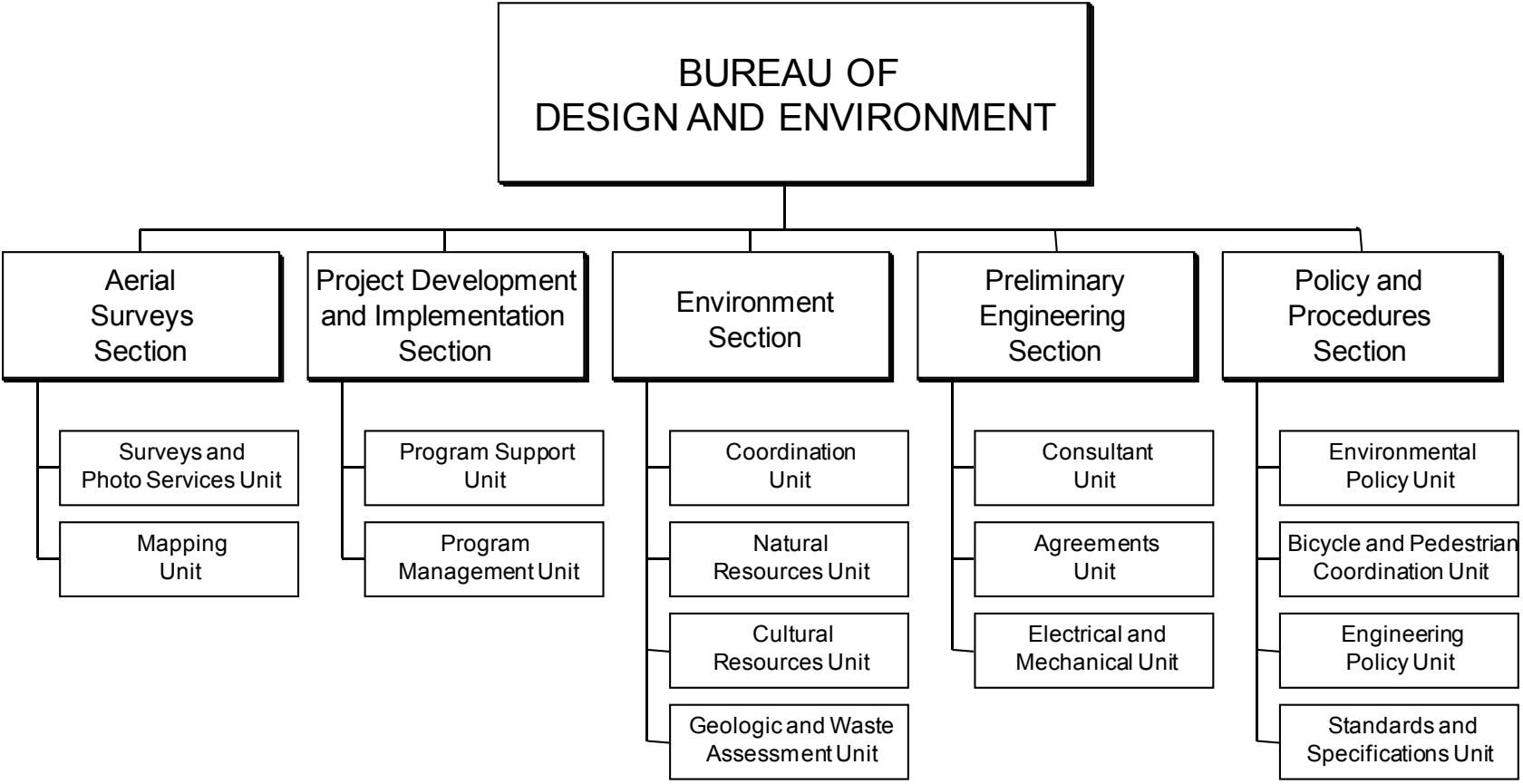
The Surveys and Photo Services Unit, in combination with the district field survey crews, is responsible for aerial surveying needs required for the Department's program of projects. The unit's responsibilities include:

- providing aerial photography and photographic services for the Department and other State agencies including scale changes for maps, plans, charts, and photographic plates used for reproduction and printing;
- maintaining survey datums and coordinate systems for a reference or base for all surveys in the State;
- maintaining the necessary records and filing systems for all Aerial Surveys Section projects;
- providing technical assistance on surveying as needed to the districts and local jurisdictions;
- assisting with high-order geodetic surveys and field survey work necessary to provide horizontal and vertical control for photogrammetric mapping; and
- maintaining the *BDE Survey Manual*.

#### **1-4.01(b) Mapping Unit**

The Mapping Unit is responsible for the following:

- providing precise topographic maps in digital format for use with a CADD interactive graphic system;



**BUREAU OF DESIGN AND ENVIRONMENT**

**Figure 1-4.A**

- providing digital imagery in raster format for use with INTERACTIVE Graphic Systems; and
- preparing specifications and agreements for consultant mapping projects and monitoring compliance.

#### **1-4.02 Project Development and Implementation Section**

In addition to the following sections, the Project Development and Implementation Section is responsible for:

- reviewing and checking project plans prepared by the districts and consultants for accuracy, completeness, and engineering validity; and
- reviewing special provisions.

##### **1-4.02(a) Program Support Unit**

The Program Support Unit is responsible for the following:

- determining project letting dates;
- clearing projects for advertising and awarding;
- processing CA/Project Status forms;
- determining the proper FHWA funding type and assigning project numbers;
- authorizing project funding;
- obtaining authorization from FHWA for all Federally funded projects including the advertisement of projects, conduct of lettings, and execution of contracts;
- monitoring the availability of funds within State and Federal funding categories;
- obtaining approvals from the Bureau of the Budget in the Governor's Office for all projects under the State's jurisdiction; and
- ensuring that plans are prepared in accordance with agreements with local agencies or other State agencies.

##### **1-4.02(b) Project Management Unit**

The Project Management Unit is responsible for the following:

- determining the official engineer's estimate for all projects offered for letting by the Division of Highways;
- analyzing bids received on lettings and presenting disposition recommendations to the awards committee;
- maintaining data on price trends;
- preparing the average unit prices used for cost estimates;
- reviewing and processing plans, proposals, and legal contract documents through the letting stage;
- preparing the Transportation Bulletin to advertise contracts for letting;
- determining pay item numbers; and
- issuing plans and proposals, maintaining listing of bidders, opening and reading bids, and processing bids for the award and execution of contracts.

#### **1-4.03 Environment Section**

The Environment Section provides guidance to districts, the Bureau of Local Roads and Streets and, at the direction of the Secretary or the Director of Highways, to other Department divisions and offices and State agencies on the *National Environmental Policy Act*; Federal and State environmental statutes, rules, and regulations applicable to specific projects; report preparation; and coordination with other State and Federal agencies. The districts serve as the primary coordinator for project studies, and the Environment Section conducts environmental surveys, provides special technical expertise, reviews environmental documents (prepared in whole or in part by the districts), prepares portions of environmental documents as needed and, where necessary, approves environmental documents for the Department.

#### **1-4.03(a) Coordination Unit**

The Coordination Unit is responsible for the following:

- administering the central office review of environmental documents, reviewing and commenting on the disciplines assigned to the Unit, compiling comments from all units in the Environment Section into a unified response and issuing State environmental approvals;
- providing expertise for the Department in the disciplines of socio-economics, agriculture, natural resources, air quality, and noise, including providing guidance on Departmental research in these disciplines;

- attending district coordination meetings and special project meetings to participate in project decisions and to guide project development;
- establishing environmental consultant prequalification criteria and reviewing consultants' Statements of Experience and Financial Condition to determine eligibility of firms requesting prequalification in environmental categories;
- reviewing and commenting on consultant advertisements, proposals, selection, and negotiations for major projects involving complex environmental documents;
- providing training in environmental matters;
- providing technical advice to the Environmental Policy Unit in the Policy and Procedures Section;
- preparing specific studies and/or sections of text and participating in ad hoc teams to develop or manage environmental documents as requested; and
- providing liaison with other organization units in IDOT and other local, State, and Federal agencies regarding the disciplines assigned to the unit and regarding procedural matters relating to the environmental process.

#### **1-4.03(b) Natural Resources Unit**

The Natural Resources Unit is responsible for the following:

- operating and managing the environmental resource surveys for individual projects to identify impacts on biological and wetland resources;
- providing technical expertise on biological resource identification, impact evaluation, mitigation, protection, and management in project development, plan preparation, construction, and operations for such resources as threatened and endangered species, critical habitat for threatened and endangered species, other important ecosystems (e.g., prairies, savannahs, wetlands), and ecological resources in general;
- providing technical expertise and guidance on water resources including wetlands, water quality, flood plains, and Section 404 permits through the planning, design, construction, and operation phases;
- preparing and/or reviewing all or portions of environmental documents including:
  - + Environmental Impact Statements,
  - + Environmental Assessments,
  - + Categorical Exclusions,
  - + 4(f) Reports, and
  - + 6(f) Reports;

- preparing and/or reviewing specialized environmental documents:
  - + biological assessments,
  - + wetland technical reports,
  - + wetland banking prospectives,
  - + conceptual and final wetland compensation plans,
  - + wetland site assessment reports,
  - + wetland monitoring reports, and
  - + draft 404(b)1 guideline reports;
- providing liaison between the districts and the central office and with local, State, and Federal resource and regulatory agencies (e.g., USFWS, IDNR, USACE, USDOJ-NPS);
- disseminating technical environmental information regarding biological resources, water resources, wetlands, flood plains, and Section 404 permits;
- participating in the development of policies and guidance related to natural resources;
- providing technical training on biological resource identification, impact evaluation, development of mitigation, habitat and species protection, management of biological resources on Department-owned land, and incorporation of appropriate features into contract plans; and
- serving on IDOT's Storm Water Committee.

#### **1-4.03(c) Cultural Resources Unit**

The Cultural Resources Unit is responsible for the following:

- directing and managing the cultural resources portion of the Environmental Resource Surveys and Studies Program;
- providing technical expertise regarding prehistoric and historic archaeological sites, historic buildings and bridges, and historic districts to highway districts, Bureau of Local Roads and Streets and, at the direction of the Secretary and/or Director of Highways, to other divisions and offices and other State agencies. Investigations for possible cultural resources must be conducted for proposed project sites, all borrow pits, economic development sites (DCCA), and for any other site which will involve a State transaction;
- meeting with historic resource agencies at the State and Federal levels to resolve project issues and remaining abreast of regulatory changes;
- providing guidance to district and central offices by:

- + attending district coordination meetings,
  - + participating in project field meetings or conducting independent field checks, and
  - + providing technical training.
- reviewing environmental documents (EAs, EISs technical reports) prepared by the districts or consultants and preparing sections of environmental documents relating to specific cultural resources; and
  - advising districts of appropriate responses including avoidance or preservation of significant resources or specific measures to mitigate negative impacts to cultural properties.

#### **1-4.03(d) Geologic and Waste Assessment Unit**

The Geologic and Waste Assessment Unit is responsible for the following:

- managing and directing Geologic and Special Waste Surveys on individual projects to identify potential impacts on special waste sites and geological resources (e.g., groundwater, sand, gravel) and potential impacts from geological hazards (e.g., landslides, mine subsidence, earthquakes);
- providing technical expertise and training on special waste problems and evaluations (e.g., underground storage tanks, public health concerns, asbestos, landfills) and expertise on geologic resources and hazards in Phase I and Phase II project development, construction, and operations;
- developing and promulgating Department criteria on the evaluation of special waste sites and geologic resources/hazards;
- developing and promulgating Department procedures for coordination activities with respect to special waste sites and geologic resources/hazards (e.g., Manual for Preparation of Preliminary Environmental Site Assessment, maintenance of waste site list, CERCLIS);
- managing and directing special waste and geological resource/hazard investigations on individual projects to identify the risk and liabilities of waste/geologic hazard sites and impacts to geological resources that can not be avoided;
- establishing consultant prequalification criteria and reviewing consultant Statements of Experience and Financial Condition to determine their eligibility for prequalifications, developing Transportation Bulletin advertisements, reviewing statements of interest, and recommending selection priorities for the hazardous waste category; and
- providing liaison between the districts and central office with the appropriate resource and regulatory agencies (e.g., USEPA, IPEA, OSFM, IDNR).

**1-4.04 Preliminary Engineering Section****1-4.04(a) Consultant Unit**

The Consultant Unit is, in general, responsible for all activities with respect to consultants up to and including selection of the consultant. The Agreements Unit administers consultant projects. More specifically, the Consultant Unit is responsible for the following:

- prequalifying of architectural/engineering consultant firms;
- in conjunction with the Agreements Unit, setting up funding for consultants;
- preparing the Request for Proposals;
- evaluating and selecting consultant firms;
- compiling consultant performance ratings;
- in conjunction with the Agreements Unit, establishing Department policies and procedures for consultant projects;
- reviewing and recommending action on annual and multiyear highway construction work programs submitted by the Office of Planning and Programming and presenting recommendations on the preliminary needs of the Division of Highways; and
- developing Statewide policies for design, operations, and monitoring district compliance.

**1-4.04(b) Agreements Unit**

The Agreements Unit is responsible for preparing and securing agreements with architectural/engineering consultant firms (after selection), railroad companies, utilities, local agencies, and other State agencies. More specifically, the unit:

- reviews, evaluates, and approves agreements prepared by the districts;
- administers the agreement process within the central office (e.g., attaining necessary signatures); and
- develops Department policies and procedures for the administration of all agreements.

**1-4.04(c) Electrical and Mechanical Unit**

The Electrical and Mechanical Unit is responsible for the following:

- designing and preparing plans for all roadway lighting projects except for District One;

- developing and disseminating Statewide design criteria, practices, and policies on roadway lighting; and
- providing technical review of electrical designs for pumping stations.

#### **1-4.05 Policy and Procedures Section**

In addition to the following sections, the Policy and Procedures Section is responsible for:

- monitoring, evaluating, and approving project studies prepared by the districts and by other transportation modes to ensure uniformity of policy compliance and to assist on special location problems;
- preparing location studies for certain complex, critical, or environmentally sensitive projects;
- attending district coordination meetings to discuss engineering issues and the status of projects;
- developing and implementing project studies using an interdisciplinary approach to resolve engineering and location problems;

#### **1-4.05(a) Environmental Policy Unit**

The Environmental Policy Unit, in general, prepares the written documentation necessary to ensure that the Department complies with all applicable State and Federal environmental legislation, regulations, and guidelines. More specifically, the unit is responsible for the following:

- maintaining Part III, Environmental Procedures, and Chapter 19 “Public Involvement Guidelines”;
- remaining abreast of changes in environmental laws and regulations and determining their impact on Department procedures;
- providing technical assistance to the Environment Section in the central office and to the districts on environmental and public involvement policy and procedural issues; and
- as necessary, publishing explanatory guidance (i.e., as Procedure Memoranda or Information Memoranda) on environmental and public involvement topics.

**1-4.05(b) Bicycle and Pedestrian Coordination Unit**

The Bicycle and Pedestrian Coordination Unit provides policy and coordinating functions for bicyclist and pedestrian programs and for the Illinois Transportation Enhancement Program. The unit is responsible for the following:

- developing and promulgating Department policy and guidance on the accommodation of bicyclists and pedestrians within the highway program,
- remaining abreast of State and national issues on bicyclist and pedestrian accommodation and determining their impact on Department practices,
- providing technical assistance to the districts on bicyclist and pedestrian issues, and
- ensuring that the Department complies with the regulations and policies governing the FHWA Transportation Enhancement Program.

**1-4.05(c) Engineering Policy Unit**

The Engineering Policy Unit is responsible for the following:

- researching, preparing, and disseminating design policies and procedures for Phase I and Phase II engineering activities, including Phase I engineering studies, to the districts and central bureaus and providing interpretation of the policies and procedures for case-specific situations;
- developing policies and procedures for the geometric design of highways, intersections, and interchanges which includes alignment and profile guidelines, superelevation design, cross section elements, median types, and capacity analyses;
- remaining abreast of new research developments and incorporating this research, where applicable, into the design policies;
- developing and disseminating procedures for pavement design and rehabilitation;
- developing policies and procedures for 3R, 3P, and SMART projects;
- developing Department policies and criteria for access control on freeways and expressways and for access management on arterial highways;
- developing Department policies and criteria for roadside safety issues including barrier selection and layout, cost/benefit analyses, and clear zones; and
- developing Department policies and procedures for special design elements including accessibility standards for the disabled.

**1-4.05(d) Standards and Specifications Unit**

The Standards and Specifications Unit is responsible for the following:

- developing and disseminating the *Highway Standards* used in contract plans to districts and central bureaus;
- developing new or revised roadway standards on the basis of internal needs, safety requirements, and new material or product development;
- initiating or reviewing requests for new or revised *Standard Specifications for Road and Bridge Construction* and evaluating their feasibility and impact;
- obtaining FHWA approval for new specifications;
- initiating or reviewing requests for new or revised special provisions and connected details for road and bridge construction and evaluating their applicability; and
- publishing the *Standard Specifications* and *Supplemental Specifications and Recurring Special Provisions* books as required.

