



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memorandum

Subject: Program Guidance Letter 87-2

Date: 23 APR 1987

From: Manager, Grants-in-Aid Division, APP-500

Reply to
Attn. of:

To: PGL Distribution List

87-2.1 Visual Glideslope Indicator System - Ben Castellano (267-8822).

This will revise guidance in PGL item 87-1.8. The new specification for visual glideslope systems will be delayed due to headquarters manpower shortage. In order to allow procurement of these systems under AIP during the interim, sponsors may use the qualified product list found in the current AC 150/5345-1 in lieu of specifications. The same ground rules of PGL 87-1.8 pertain if the sponsor wishes to restrict procurement to either single (PLASI) or multiple (VASI or PAPI) type units. Applications may now be processed.

87-2.2 Airport Planning Documents - Wrensey Gill (267-8782).

The National Planning Division, APP-400, constantly receives inquiries from Congressional staff members, aviation industry groups, State and local government officials, etc., concerning proposed airport growth, forecast, layout, and future development. Most of these questions could be answered quickly (without having to call regional/field offices) if current information was on file here in headquarters.

Because of this we are requesting as an interim measure that one copy of each of the following documents, if readily available and easily obtainable, be submitted to APP-400 (rather than APP-520) as soon as possible:

- a. Summary volume of all State Aviation System Plans and/or updates.
- b. Summary volume of all Regional/Metropolitan System Plans and/or updates.
- c. Copies of Airport Master Plan Report with ALP for large and medium hub airports only.

This change in distribution of the above plans is effective immediately and will become permanent when incorporated in the next revision to Order 5100.38, Chapter 4.

87-2.3 Multi-Year Grants and Participation Rate Changes - Ben Castellano (267-8822).

There has been at least one occurrence where a sponsor in a multi-year grant experienced a participation rate change due to the airport going from a primary airport to a large primary airport (rate change from 90% to 75%). In a situation such as this, the participation rate in each subsequent year of the multi-year grant would be at the current year level and not at the rate of the original year in which the grant was made. Order 5100.38 will be revised to reflect this. (See Attachment 1.)

87-2.4 Airport Capacity Task Forces Under AIP - Bob Yatzeck (267-8791).

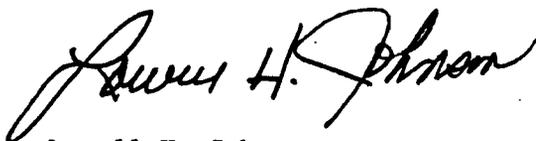
The FAA currently is sponsoring airport-specific task forces at six congested or soon-to-be congested airports. The objective of the task force program is to establish a forum in which local representatives of the aviation community--airport management, the FAA, system users, industry groups, and airport planning consultants--work together to develop a plan for improving airport capacity by identifying and evaluating options leading to better airport-use strategies and facility improvements. We believe this program lends itself to being performed under the AIP as an integral part of an airport master plan.

Current airport capacity task forces are chaired and fully funded by the FAA. Under the AIP, a capacity task force would be cochaired by the FAA and the airport sponsor; the sponsor would, of course, provide a matching share of the cost, and a planning consultant with computer simulation modeling expertise would provide support to the airport sponsor as task force cochairman.

The attached sample work scope has been developed for use by sponsors contemplating initiation of a capacity task force study at their airport. For further information, see Program Guidance Letter 86-6.1 or contact the ACPO.

87-2.5 AWOS - Ben Castellano (267-8822).

On April 9, Artais Weather Check V-1 (AWOS 1) and Weather Check V-2 (AWOS 2) were approved as meeting the requirements of Advisory Circular 150/5220-16, Automated Weather Observing Systems (AWOS) for Non-Federal Applications.



Lowell H. Johnson

b. Grant Agreement Format.

(1) The following clause should be inserted after the words "Project Application" at the bottom of page 1 of FAA Form 5100-37:

"Whereas this project will not be completed during fiscal year, 19__, and the total U.S. share of the estimated cost of completion will be \$ _____;"

(2) See appendix 9 for the Special Condition which should be added on page 4 of FAA Form 5100-37.

c. Establishment of U.S. Share.

(1) The cost of the eligible work in the total project is estimated. The U.S. share is calculated using the applicable participation rates for the type of work.

(2) The amount calculated in c(1) may not exceed the sum of the sponsor's current entitlement funds, the entitlement funds expected to be received through the duration of the project, and the amount of discretionary funds that can be committed to the project in the initial year. If terminal building work is involved, the annual limitation on the amount of entitlement funds that may be committed to the project must also be considered.

(3) If the amount calculated in c(1) exceeds the amount estimated to be available in c(2), then the scope of the project should be reduced until the two amounts are equal.

d. Initial Year. The U.S. share established in c. above is stated in the grant agreement (see b(1), above) and represents the total U.S. share of the cost of the project. The initial grant also specifies a current year obligation consisting of the sponsor's current entitlement funds and available discretionary funds, if any.

e. Follow-on Years. The grant may be formally amended each fiscal year (see Section 4 of this chapter) or continued through a letter of agreement (appendix 20) through the duration of the project to include additional obligations for the new fiscal year with the sponsor's entitlement funds. However, the sum of the yearly obligations under the multi-year grant may not exceed the total U.S. share of the estimated cost of completion established in c. above.

f. Increasing the Total U.S. Share of the Estimated Cost of Completion. Once established in the initial grant agreement, the total U.S. share of the estimated cost of completion may be increased in accordance with paragraph 1132.

* g. Change in Participation Rate. If, in subsequent years following that award of a multi-year grant, the sponsor's participation rate changes (e.g. the airport goes from a large primary to a primary and the rate changes from 75% to 90%), the Federal share of the project cost will be at the current year rate and not at the rate of the initial year in which the multi-year grant was signed. *

Scope of Work

Airport Capacity Task Force Study

For (Name of Airport)

Article I. Statement of Work

1.0. General

This statement of work covers the requirement for detailed studies of airport capacity and aircraft delay at (airport) and for a quantitative assessment of the changes in capacity and delay that would accrue if alternative enhancement options were implemented. This statement of work defines and delineates the specific activities and efforts to be performed by the consultant in support of the Airport Capacity Task Force at the airport. The Task Force shall be cochaired by a representative of the airport sponsor and by a representative of the Federal Aviation Administration, (FAA), and will be composed of local members of the aviation community, system users, and authorities responsible for master planning at the airport.

The consultant shall provide the necessary personnel, facilities, and services to assist the airport sponsor, as Task Force cochairman, by:

- o Designing capacity and delay experiments;
- o Preparing computer simulation model input data;
- o Analyzing and interpreting the resultant output data;
- o Providing material for briefings, technical reviews, and reports associated with airfield capacity and delay at the airport, as directed by the representative of the airport sponsor acting as Task Force cochairman; and
- o Drafting, submitting for review, and finalizing the capacity enhancement action plan, as specified in this document.

The major objective of the Task Force is to recommend specific capacity enhancements for implementation to reduce airport congestion. To achieve this objective, the Task Force must:

- o Determine present and future capacity and delay values for the airport;
- o Identify site specific causes of airport delays in the terminal airspace, airfield, and apron-gate operating areas; and

quantify delay-reduction benefits of alternative improvements in air traffic control procedures, facilities and equipment, airport development and airport and airline policy for immediate, short-term, and long-term implementation.

The extent to which computer simulation models are used in support of a Task Force will be dependent upon the difficulty of site-specific problems, the number of possible runway use configurations, and available capacity enhancement options. The computer simulation work will focus on system elements where aircraft operations are the predominant factor, i.e., the airspace-airfield system and the apron gate system.

2.0 REQUIREMENTS

2.1 GENERAL REQUIREMENTS. The consultant shall provide the professional and technical services necessary to perform the specified analyses and related planning services in support of the airport sponsor as cochairman of the Task Force.

2.1.2 GENERAL DESCRIPTION OF WORK. The consultant's work shall involve development of technical plans and analyses, coordination, and documentation.

In performing this work, the consultant shall have the option of using FAA airfield simulation models, its own models, models available from other sources, or any combination of these as specified below.

FAA models: Two FAA airfield simulation models are in the public domain and are obtainable through the National Technical Information Service in Springfield, Virginia:

- o The FAA Airfield Capacity Model is used for computations of theoretical maximum hourly traffic flow for each configuration and weather condition at the airport; and
- o The FAA Airfield Delay Simulation Model (ADSIM) is used for computations of hourly and/or daily delays to aircraft.

Other than FAA models: The consultant shall use its own simulation models or those from another source only if such models are acceptable to the FAA. Prior to receiving notice to proceed, the consultant shall either provide documentation showing that the models it intends to use in performing this work have been found acceptable by the FAA or must submit information on the models, as required, to the FAA (Office of Airport Planning and Programming, National Planning Division, APP-400) for an acceptability determination.

In the application of these models, the consultant shall be required:

- o To collect, correlate, analyze, and utilize data to calibrate the models for use at the airport;
- o To assist in developing recommended experimental designs for use in the models to evaluate existing and future conditions at the airport;
- o To prepare detailed input data for analyzing each recommended experimental design;
- o To refine and adapt the model input, logic, and output as necessary to conform with specific requirements of each recommended experimental design;
- o To operate the models in conducting studies of the airport; and
- o To interpret and present the results of operating the specified models in a form usable by the Task Force.

2.1.2 WORK RESPONSIBILITY. The consultant shall accept direction only from the airport sponsor's representative serving as Task Force cochairman.

2.2 DETAILED REQUIREMENTS. The consultant's work shall consist of supporting the Task Force with capacity and delay estimation studies. During performance of this statement of work, the consultant shall be responsible to the airport sponsor, but shall be required to work in cooperation with other members of the Task Force. The consultant's technical support shall involve no more than (maximum number) capacity and delay estimates. The consultant shall be responsible for operating the computer models. The consultant shall also provide recommendations on potential enhancements that could be simulated in the technical plan specified under Paragraph 2.2.1.

2.2.1 DEVELOPMENT OF THE TECHNICAL PLAN. The consultant shall develop and, at the time of the initial management and organization meeting of the Task Force, provide a draft technical plan which includes a description of:

- o Available airfield simulation models;
- o Method of approach;
- o Data requirements for the simulation models and proposed sources;
- o "Strawman" experimental design and list of improvements intended as a starting point for Task Force discussion;
- o Proposed milestone schedule; and
- o Proposed outline of final capacity enhancement action plan.

The consultant also shall clearly identify in the draft technical plan each major work phase, specific work activities, approval/decision/redirection points, and deliverable items. The draft technical plan shall be reviewed and commented upon by the Task Force before it is finalized. The consultant shall prepare and present the final technical plan at the first meeting of the full Task Force. The technical plan shall be reviewed by the Task Force and approved by the airport sponsor's representative serving as Task Force cochairman prior to initiation of tasks under paragraph 2.2.2, 2.2.3, and 2.2.4.

2.2.2 CALIBRATION OF THE MODELS. The consultant shall calibrate the simulation models to existing conditions at the airport. The calibration shall be reviewed by the Task Force and approved by the airport sponsor's representative serving as Task Force cochairman prior to initiation of the task under Paragraph 2.2.5.

2.2.3 PREPARATION OF EXPERIMENTAL DESIGNS. The consultant shall provide guidelines, technical advice, and recommendations to the Task Force on designing a set of experiments using the simulation models to evaluate the capacity and delay associated with activity at the airport. The consultant shall assist the Task Force in finalizing the experimental designs. The final decision on the number of required capacity and delay model estimates will be made by the Task Force and approved by the airport sponsor's representative serving as Task Force cochairman, but in no event shall the number of estimates exceed the maximum number specified under Paragraph 2.2.

2.2.4 PREPARATION OF THE INPUT DATA. The consultant shall assist the Task Force in collecting, correlating, and integrating available data and shall prepare all required detailed input data for the capacity and delay analyses of the airport. These data may be general or specific. The input data shall include such items as:

- o The Airport Layout Plan;
- o Taxiway and apron traffic flow;
- o Gate assignments and designations;
- o Runway configurations;
- o Demand data including aircraft mix;
- o Existing runway uses;
- o Weather data;
- o Airspace restrictions, if any;
- o Runway exit utilization;
- o Operational characteristics (e.g., separations for arrival/arrival, departure/arrival, departure/departure, arrival/departure);

- o Gate service times for the classes of aircraft serving the airport;
- o Lateness distribution for arrivals; and
- o Aircraft demand characteristics for the time frames to be studied.

In performing this work, the consultant shall identify the data, assumptions, other information, and technical assistance needed from the Task Force to complete this task. The input data and assumptions shall be reviewed with the Task Force and approved by the airport sponsor's representative serving as Task Force cochairman.

2.2.5 PERFORMANCE OF CAPACITY AND DELAY STUDIES. The consultant shall perform studies designed to provide the Task Force with an in-depth understanding of airfield and airspace performance and to quantitatively assess the impact of alternative capacity enhancements. This task involves evaluating the effects of different factors and operating conditions on capacity and delay at the airport.

The specific enhancement to be studied will be determined by the Task Force. Categories and examples of potential enhancements are as follows:

- o Airspace procedures (sidestep procedures and staggered, close parallel, triple parallel, and converging ILS approaches);
- o Airport development (new terminals and runways, angled-exists, holding areas, departure runway bypass taxiways);
- o Equipment (new or upgrading of ILS/MLS, ASDE, or runway lighting); and
- o Demand management: (relocating general aviation and depeaking arrivals/departures "within the hour").

2.2.6 ACTIVITY FORECASTS. The consultant shall generate a traffic sample for the future airport configuration utilizing Task Force recommendations and insights. Distributions of the traffic, the class percentages, and each airline's contribution to the traffic shall be determined for the most likely conditions at the airport for the time period under study.

Basic demand shall be generated from the OAG schedule, facility records, and sample field data. Future demand shall be obtained using the market analysis contained in the FAA Aviation Forecasts prepared by the Office of Aviation Policy and Plans (APO, FAA headquarters) or other sources agreed upon by the Task Force. Future demand shall be expressed in average day-peak month traffic count. The FAA representative serving as Task Force cochairman will provide the FAA demand forecast at the initial management and organization meeting of the Task Force. Task Force members will be requested to review the forecast and be prepared to furnish additional information pertaining to demand level and fleet mix at the first

meeting of the full Task Force so that agreement can quickly be reached on future demand at the airport.

2.2.7 DATA PACKAGES. The consultant shall analyze and evaluate model output data, and shall be responsible for properly interpreting and presenting the results (including graphic work and briefings) to the Task Force. The presentation shall be supported by a data package which contains information on the following items with respect to each enhancement studied:

- o Benefits in terms of operating cost savings, delay reductions, and capacity increases;
- o Direct and indirect operational impacts;
- o Capital and operating costs; and
- o Technical, institutional, and financial issues to be resolved prior to implementation.

The consultant shall attend designated Task Force meetings (tentative schedule shown in Table 1), for the purpose of preparing, presenting, and discussing data inputs, experimental designs, and results.

2.3 COORDINATION. The consultant shall be responsible for maintaining full coordination and exchange of information with the Task Force.

2.4 DOCUMENTATION. The consultant shall develop and deliver complete documentation. The documentation shall include the data inputs, the experimental designs, and the outputs, with discussion and interpretation of results. The consultant shall provide reports, plans, briefing materials, and all other documentation as specified in this statement of work. Also to be included in or appended to the documentation shall be the rationale, computations, and formulae related to any of the material developed. Documentation shall be submitted in accordance with the schedule specified in Article II.

The consultant shall be responsible for providing the typing and reproduction services and facilities to produce the required documentation. All documents shall be complete, thorough, accurate, and clearly stated responses to described problems. Each document shall be complete within itself.

TABLE 1
AIRPORT CAPACITY TASK FORCE
TENTATIVE MEETING SCHEDULE

<u>Meeting</u>	<u>Objectives</u>	<u>Products</u>	<u>Time Interval (Weeks)</u>	<u>Total Time (Weeks)</u>
1 (Initial management and organization meeting)	Discuss draft technical plan, including "straw-man" list of potential improvements. Review forecasts.	Preliminary technical plan recommendations. List of non-FAA/airport sponsor invitees to join task force.		
2 (First meeting of full Task Force)	Give briefing on final technical plan. Review forecasts, potential improvements, data requirements.	Agreement on technical plan, data for model input, forecasts, scope of work, and potential improvements.	6	6
3	Review experimental design, accuracy of delay model, and baseline delay runs. Finalize improvements to be studied.	Agreement on validity of baseline delay runs and on improvements to be simulated.	8	14
4	Review results of initial simulations and plan for remaining simulations.	Agreement on output from initial simulations and on input for remaining simulations.	6	20
5	Review remaining simulations.	Agreement on output from remaining simulations.	6	26
6	Review delay results from all simulations.	Agreement on all simulations delay results. Draft improvement recommendations.	6	32
7	Review draft capacity enhancement action plan.	Agreement on work necessary to finalize action plan.	6	38
8	Final wrap-up meeting. Publicize action plan. Determine future role of task force.	Distribution of final action plan.	6	44

ARTICLE II. REPORTS.

A. **Monthly Progress Reports.** The consultant shall submit a letter report by the tenth day of each month showing progress during the past month and activities planned for the next month. Problems shall be identified noting effects on completion and actions taken or proposed. The report shall also note any task personnel changes, percent of task completed, and shall summarize any travel occurring during the reporting period.

B. **Technical Plan.** The consultant shall prepare a draft technical plan as described in Paragraph 2.2.1 and submit ten (10) copies for review at the initial management and organization meeting of the Task Force. The consultant shall prepare the final technical plan as described in Paragraph 2.2.1 and submit fifteen (15) copies for review and approval at the first meeting of the full Task Force.

C. **DATA PACKAGES.** The consultant shall prepare data packages as described in Paragraph 2.2.7. A total of four sets of data packages shall be prepared; one each for submittal at Task Force Meetings 3 through 6 as shown in Table 1. Fifteen (15) copies of each data package shall be provided for Task Force review.

D. **DRAFT CAPACITY ENHANCEMENT ACTION PLAN.** The consultant shall submit a draft final report following completion of the work (after Meeting 6 as shown in Table 1). The plan shall be a stand-alone document for Task Force use. The draft capacity enhancement action plan shall describe the work performed, the nature of the tasks, the assumptions, inputs and results, conclusions reached, actions taken, and recommendations resulting from the Task Force effort. Fifteen (15) copies of the draft capacity enhancement action plan shall be submitted to the airport sponsor. The draft capacity enhancement action plan shall be reviewed by the Task Force and approved by the airport sponsor's representative serving as Task Force cochairman prior to preparation and submittal of the final capacity enhancement action plan.

E. **FINAL CAPACITY ENHANCEMENT ACTION PLAN.** The consultant shall prepare a final capacity enhancement action plan. Fifty (50) copies of the final plan shall be submitted to the airport sponsor.

ARTICLE III. COMPLETION OF WORK AND DELIVERY

A. **TERM.** Performance of the work shall be accomplished within a period of (number) calendar days from date of notice to proceed.

B. **DELIVERY SCHEDULE.** All work and delivery of items shall be accomplished in accordance with the following schedule:

1. Draft Technical Plan. After receipt of notice to proceed, the consultant shall submit a draft technical plan within forty-five (45) calendar days. The Task Force shall review and comment on the draft plan within thirty (30) calendar days of receipt of the draft technical plan. The consultant shall submit the final technical plan within fifteen (15) calendar days after receipt of approval from the airport sponsor's representative serving as Task Force cochairman.

2. Data Packages. The consultant shall submit a data package at Meetings 3 through 6 as shown in Table 1.

3. Draft Capacity Enhancement Action Plan. The consultant shall submit a draft capacity enhancement action plan no later than thirty (30) calendar days after completion of all work (after Meeting 6 as shown in Table 1). The Task Force shall review and comment on the draft capacity enhancement action plan with fifteen (15) calendar days after receipt.

4. Final Capacity Enhancement Action Plan. The consultant shall submit the final capacity enhancement action plan within thirty (30) calendar days after receipt of approval from the airport sponsor's representative serving as Task Force cochairman.

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