This is Appendix One to Exhibit A,
consisting of 13 pages
Initial:

Owner_____

Engineer_____

FINAL SCOPE OF WORK
AIRPORT MASTER PLAN STUDY
POWELL MUNICIPAL AIRPORT - POWELL, WYOMING

Understanding of the Project

The Powell Municipal Airport, serving the City of Powell is located on top of a high bench nine miles north of town. The airport has been serving the community for many years. The field elevation is 5,092.8 MSL and comprises approximately 830 acres of land. Runway 13/31 is currently 6,200 feet by 100 feet. All of the pavements on the airport are asphalt. The runway pavement is in good condition. On the aircraft parking apron, the pavements are also in good condition. The airport has a MIRL lighting system, with only taxiway and apron reflectors. The airport is located in "uncontrolled" airspace. There is a full time manager, who contracts with the City of Powell to provide fuel service (Sponsor owned tanks and system). The Manager provides maintenance and flight instruction as a separate entity. Access to the airport is from County Road 9 (Elk Basin Highway) east of the airport.

The existing airport has been serving the community as a general aviation facility for many years. However, the wind conditions are at times extreme up on the bench and several recent flights for the hospital have been turned away due to the high crosswind component. The airport meets all of the FAA design standards for a B-II facility – with no modifications to these standards.

The City of Powell has recently made a commitment to serve the aviation needs of the Powell, eastern Park County and surrounding area by initiating this Master Plan study. During the study, the aviation needs of the community will be reviewed and compared against the existing airport, and then a decision will be made relating to an appropriate development alternative. This may include shifting the alignment of one or both of the existing turf crosswind runways and proposing improvements to the runway to better serve the needs of the community.

There are several viable development alternatives available to meet the needs and demands being placed upon the airport by the current and future users. Each of the alternatives has different impacts to the community and to the long-term potential of the airport. The decision line of this project will generally follow:

- Inventory and Existing Conditions
- Forecasts

- Demand Capacity and Facility Requirements
- Development Alternatives
- Environmental Overview
- Airport Layout Plans
- Development Schedule
- Capital Improvement Program (CIP)
- Cost/Benefit Review

The principal objective of this planning project is to provide a complete Master Plan report and associated drawings (as defined in the Airport and Airway Development Act of 1982 as amended by the Airway Safety and Capacity Expansion Act of 1987) for the City of Powell, Wyoming (Sponsor). The Master Plan will provide a realistic guide for the development of facilities and establishes a schedule of priorities for the proposed improvements for the airport. In its continuing effort to provide a high level of aviation service and to support economic development in the region, the City of Powell recognizes that its airport facilities need to be evaluated periodically regarding their adequacy to meet future needs. Through the Master Plan process described here, the consultant will provide information and recommendations so that community leaders can plan for realistic development at the airport.

Results or Benefits Expected

The report and accompanying plans define the type and extent of development needed to accommodate the current, 5-, 10 and 20-year aviation needs of Powell and northeastern Park County. This permits the long-range programming and budgeting for projects and provides for orderly development. The aviation demand on the airport makes it important to plan for aviation safety, capacity and land use compatibility. Benefits derived from the plan will affect the airport, its users, members of the community and the surrounding areas.

Background and Approach

The Master Plan report will provide guidelines for development, which will satisfy short-, intermediate and long-range aviation demand, which at the same time is compatible with environmental concerns and community development goals. The study will be produced in full coordination with the state and local planning agencies that will be consulted for input. Full review and consideration will be given to appropriate Wyoming and Federal airport system planning documents. The FAA Advisory Circular 150/5070-6B "Airport Master Plans" and AC 150/5300-13 "Airport Design" as well as other applicable Advisory Circulars will be used and followed where appropriate. The project will follow the FAA

guidelines for an Airport Master Plan and all items on the April 1997 FAA Northwest Mountain checklist will be addressed.

General Scope of Project

Following is a general description of the elements included in completion of the airport layout plan report:

a) Review any existing plans and reports for applicability to present study.

b) Inventory the existing facilities at Powell Airport and general conditions.

c) Collect available socioeconomic data reflecting the historical and existing characteristics of the airport service area.

d) Forecast aviation demand levels utilizing the State System Plan to determine based aircraft, operations and the traffic mix. The critical aircraft will also be determined. Socioeconomic information and historical activity levels will also be reviewed, along with any available regional, State and FAA forecasts.

e) Determine property requirements.

f) Describe requirements for airport facilities, such as runway lengths and widths, navaids, general aviation apron area and tiedowns, number of hangars, fuel facilities, associated airport service facilities and ground access. Summarize available tabulated wind data (utilizing the AWOS data if available).

g) Review safety issues including runway protection zones, object free areas, object free zones and runway safety areas.

h) Compare the "needs" of the airport with the existing "assets" (facility requirements) and determine the shortfalls as well as areas where the existing airport meets or exceeds the needs.

i) Develop alternatives to meet runway demands for the main and crosswind facilities.

j) After selected site development alternatives are chosen by the Sponsor, the Consultant will Master Plan the airport, creating a new ALP set of drawings and report.

k) Review land use in the airport influence area and make recommendations regarding compatible land use. Including, but not limited to, possible industrial park areas.

l) Complete an environmental overview.

m) Prepare a Capital Improvement Program (CIP).

Methodology

The fist goal of the study will be to gather available data on the airport facilities, use and users, maps, photos and other pertinent information. The study will provide the Sponsor a source of information on which to base decisions on. The final portions of the study will Master Plan the site and develop a schedule and implementation plan to facilitate the orderly development of aviation assets.

Coordination of the study with all appropriate agencies will be an important consideration during the course of the study. Findings and recommendations of the study will be summarized, documented and presented in interim and final reports using easily understood graphics and text. All applicable local, state and federal requirements will be recognized and adhered to. The report and associated drawings will be completed in accordance with FAA guidance, including the Property Map guidelines, ALP checklist and other applicable advisory circulars. The ALP checklist will be submitted to the FAA along with the final ALP drawings.

Previous reports and associated work will be reviewed as required to provide a comprehensive plan for implementation. The study will be completed with tasks being accomplished in an orderly and timely fashion. The end result will provide a document that gives the community a plan to ensure future growth and viability of the airport.

Powell Municipal Airport
Airport Master Plan
Detailed Scope of Work

Element 1 - Inventory

The inventory section will include a survey of existing airport facilities, a collection of community data, a survey of the natural environment in the airport area and a review of aviation activity at the airport. This element will include, but is not limited to, the following:

1.1 Airport Facilities

An inventory of airfield facilities and services will be prepared using available records, existing plans and physical site inspections. This will include details on the following:

- Airside facilities such as runways, taxiways, aprons, lighting and navaids;
- A topographic and location survey of the runway ends and touchdown zones;
- Landside facilities such as access and parking, hangars and other buildings, FBO and other tenants; and
- Support facilities including utilities, fueling facilities and emergency facilities.

1.2 Community Information

This will require research and review of the following information:

- Socioeconomic characteristics;
- Existing and proposed land uses and zoning in the airport vicinity;
- Ground transportation and access road capacity and plans;
- Existing associated studies and reports of the airport vicinity and surrounding environment;
- Planning and zoning districts;
- Water resources and irrigation districts;
- Flood plains and other restrictive natural occurrences;
- Height restrictions and building codes; and
- Population statistics.

1.3 Natural Environment

In this element, information will be obtained about the natural environment that may have an impact on airport operations, safety, airport improvement alternatives and cost of improvements. The information will be obtained through

various existing studies, aerial photographs, Geological Survey Publications including topographical maps, and federal, state and local agencies. This data may include, but not be limited to information on floodplains, topography, soils and geology, climate, vegetation and threaten or endangered flora/fauna as provided by the US Fish and Wildlife Service.

1.4 Aviation Activity

Historic based aircraft data and operations information will be obtained. In an effort to gain as much information as possible about current airport operations, a user survey will be developed and distributed with the results summarized. In detail, the inventory of aeronautical activity shall review the following information:

- Historical aircraft operations by type, number, arrivals, departures local and itinerant operations.
- Based aircraft fleet mix.
- Air traffic operations and runway use.

1.5 Collect Financial Data

The current financial standing of the airport will be gathered and presented. Items such as revenues and expenses relating to the facilities upkeep and maintenance, salaries and capital improvement project costs will be presented. Existing leases will be reviewed and discussed.

In addition, current sources of revenues for the airport will be discussed.

Element 2 - Forecasts

Utilizing the State System Plan and FAA estimates, historical aviation activity data collected in element 1.4 and user surveys, activity projections for the 5-, 10- and 20-year time frames will be prepared. These forecasts will form the basis of any future airport development program.

2.1 Based Aircraft

Projected based aircraft will be determined for each of the three planning periods. Both total aircraft and fleet mix numbers will be determined.

2.2 Aircraft Operations

Operational levels for both local and itinerant aircraft will be determined for each time frame. Operations by current and future design aircraft will be determined and forecasted. Approval of all forecasts by the FAA, State and Sponsor will be required prior to the commencement of Element 3.

Instrument operations forecasts will be made based on annual itinerant operations, along with projections of annual instrument approaches. The critical "design" aircraft will be ascertained for current aviation activity levels and a projection made as to the future design aircraft. The design aircraft data will be used to determine the recommended airport reference code for use in the facility requirements phase.

Element 3 – Demand Capacity / Facility Requirements

Using the forecast levels of aviation activity, the demand associated with these forecasts must be evaluated to determine the adequacy of the existing facility. Demand/capacity is defined as the relationship between anticipated aviation demand (especially during any peak operational periods) and an airport's physical ability to safely accommodate that demand. The purpose of a demand/capacity analysis is to assess the airport's ability to accommodate its day-to-day and long-term demand efficiently and without undue delays or compromises in safety, and to assist in determining when improvements are needed to meet specific operational demands.

Facility requirements (the size of the facility build-out needed to meet or exceed the demand) based on aeronautical needs will be developed to meet airside, landside and property needs for each of the planning periods.

3.1 Airside Facilities

Facilities relating to runways, taxiways, aircraft parking aprons, building area facilities, fuel storage areas, navigational aids and airspace will be described for each planning period. This will also include instrument approach requirements.

3.2 Landside Facilities

Terminal area improvements, such as hangars and fixed-base operator facilities, utilities, auto parking and airport ground access, will be documented based on forecast demand for each planning period.

3.3 Property Requirements

With information obtained during the inventory, property requirements needed to meet ultimate airport development will be described. Additionally, obstruction removal will be addressed as it relates to FAR Part 77 airspace standards.

Element 4 – Development Alternative(s)

The alternatives presented will be various comparisons of the facility required by the demand and the available resources and constraints.

4.1 Development at Airport

The study will develop several expansion alternatives for meeting the aviation demand and needs at the airport; such as crosswind runways and alignments. The detail of these alternatives will show the land necessary to meet the FAA guidelines for the design ARC, including the RPZ, ROFA, ROFZ and RSA and building restriction lines. Graphics will be developed that will clearly show the impacts of the alternatives.

General environmental and social impacts of each of the proposed alternatives improving for the airport will be discussed, including developing representative noise contours (if the number of forecasted operations allow for an accurate model to be developed) for the forecasted aviation traffic. Detailed cost estimates will be prepared for the various alternatives. These costs and impacts will become the baseline for the development comparisons.

Element 5 - Airport Plans

After the development alternatives are selected, the Consultant will Master Plan the site. A full set of airport layout plan drawings and accompanying report will be prepared.

FAA standards as defined in Advisory Circular 150/5070-6A, "Airport Master Plans", the April 1997 Denver ADO ALP Planning Checklist, and 150/5300-13, "Airport Design," will be followed in developing appropriate layout drawings. All drawings will be produced on 22" x 34" sheets (this allows for a 11"x 17" scaled reduction for inclusion in the Master Plan Report). The airport layout plan set is a graphic presentation to scale of existing and proposed airport facilities, their locations on the airport, and the pertinent clearance and dimensional information required to show conformance with applicable standards.

5.1 Airport Layout Plan

The airport layout plan will include the following items at a scale of approximately 1"= 400':

1. Layout of existing and future facilities including runways, taxiways, aprons, runway safety areas, buildings, navaids, paved areas, roads, lighting, runway marking, fences, major drainage facilities, segmented circle, wind indicators, fuel farm and beacon.

2. Wind Rose and coverage analysis if available.

3. Airport data table including airport elevation, ARP coordinates, airport magnetic variation, mean maximum daily temperature, airport reference code, airport and terminal code, taxiway lighting and NPIAS role.

4. Runway data table including runway identification, percent gradient, percent wind coverage, pavement type, pavement strength, approach slope, runway lighting, runway marking safety area dimensions, design category of critical aircraft, instrumentation and approach aids, end coordinates and visual aids.

5. Legend and building tables.

6. Title and revision blocks, Sponsor approval block and modification to standards.

7. Vicinity and location maps.

8. Airport reference point.

9. Topographic information.

10. Elevations, including: 1) runways - existing and ultimate ends, intersections, high and low points; 2) roadways/railways - intersection points with RPZ and intersection with extended runway centerline; and 3) top elevations of structures on airport.

11. Building restriction line and runway visibility zone.

12. Runway details including dimensions, orientation, separations, lighting, stage lengths, declared distances, OFZ dimensions, OFA dimensions and line of sight - requirements and actual.

13. Taxiway details including widths and separations.

14. Apron details such as locations and dimensions, aircraft parking and lighting.

15. RPZ details including locations, size and required property acquisition.

16. Navaids location, type and critical areas. Wind cone/tee and segmented circle location(s).

5.2 Airspace Drawing

The airspace drawing will include a plan view of Part 77 surfaces based on ultimate runway length at a scale of 1" = 2,000'. The drawing will be developed and depicted on a U.S.G.S. topographic base and penetrations will be identified. The extended centerline profile will be depicted out through the Conical Surface.

5.3 Runway Approach Zones and Inner Approach Zones (Runway Protection Zones)

Existing, staged and ultimate runway protection and approach zones will be developed for each runway end. Local height zoning ordinances will be noted. Plan and profile views of each area will be developed showing the ground profile composite of the highest terrain across the width of the approach and all significant objects along with estimated dimensions. Both the Inner Approach and the Approach drawings will have an obstruction table, which will include obstruction number and description, amount of surface penetration and proposed obstruction disposition.

5.4 Terminal Area Drawing

The Terminal Area Drawing will be a detailed large scale plan view of the building area and will include all structures, aprons, tiedown areas, fueling facilities, FBO facilities, entrance road and auto parking areas. Also included will be a legend and building data table showing structure number and top elevations of structures.

5.5 Land Use Plan

This drawing will include existing and recommended land use off-airport. Approximate scale for the plan will be 1" = 1,000'.

5.6 Property Map (Exhibit "A")

The existing property information for the airport will be combined onto an Airport Property Map. Existing fee simple acquisition, avigation easements, and public rights-of-way will be displayed. This exhibit will rely on existing data only (deed records and recorded easements) and will be drawn to an appropriate scale. No boundary survey will be performed. This map will indicate Federal and State interests in previously purchased property if any (as provided by the respective agencies).

Element 6 - Environmental Overview

It will be necessary to consider and identify significant environmental impacts, which may prevent continued or expanded airport operation. All items listed in FAA Order 5050.4B, "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions" (or current document), will be briefly addressed (coordination with State and Federal agencies will be required – often described as "letter coordination" – no actual field work will be preformed).

Element 7 - Phased Development Schedule

This element will present a development schedule in an easy to understand format. This element will be developed in at least three planning periods, the zero to five year (short-term), the six to ten year (intermediate) and ten to twenty year (long-term). The full development schedule will include State only projects and other maintenance items, such as cracksealing, pavement surface treatments and equipment. This element will be merged with the Airport's *Capital Improvement Program (CIP)*. A second, "constrained" CIP will be developed and presented to the airport that will show the development under a minimal funding scenario, showing only items absolutely needed for the facility to operate safely.

A Professional Engineer registered in the State of Wyoming will prepare the cost estimates. A colored sketch of the airport and proposed projects will be included as part of the CIP.

Meetings

In addition to informal meetings with the Sponsor, FAA and the State, at least four presentations are planned. It is proposed that these presentations be public meetings that would involve the community, FAA, State Aeronautics, Airport Board and other interested groups or agencies. In order to facilitate the most public involvement, it is proposed that the presentations be advertised in the local paper and notices be placed at the airport and other city/county offices at least two weeks prior to the presentation. The consultant will be responsible for all agenda, handouts, graphics and advertisements for these meetings (it is typical for the consultant to provide the wording for the public advertisements and for the Sponsor to pay the cost of the advertisement, which is eligible for project reimbursement). The consultant will attend and conduct all meetings. The format of the meetings may vary with the material presented, but in all cases will be agreed upon in advance with the Sponsor.

It is proposed that the presentations will be scheduled at the following points in the study:

1. Project start (kickoff);
2. Completion of the inventory, forecast and facility requirements;
3. Presentation of the Development Alternatives; and
4. At the presentation of the final draft documents (Master Plan) to the Sponsor and the public for review.

After the inclusion of public/agency comments on the draft document, the consultants will present the final plan and drawings to the Sponsor.

The consultants understand and appreciate the value and need for public input in the planning process. The meeting schedule proposed should allow for open channels of communication and full public input. However, if during the course of the study at any point decided upon by the Sponsor, additional meetings are desired, the consultants will do their best to accommodate the desires of the Sponsor.

Reports

Ten copies of the draft and 20 copies of the final reports will be provided to the airport, along with five sets of draft and final airport layout plans for distribution. In addition, one copy of the draft report and one set of the draft layout plans will be provided to the FAA and State; after the FAA and State comments are addressed, six revised sets will be provided to the FAA for Airspace Coordination. Six sets of the final report and drawings will be provided to the FAA (one to be returned to the State after being signed). All final electronic files of publicly presented documents will be provided to the Sponsor/State/FAA at the completion of the project.

Sponsor Master Plan Committee

The Sponsor may select up to six (6) persons to form an Airport Master Plan review Committee. This group will be responsible for reviewing documents prior to public release, assisting the consultant in community contacts, providing input and feed-back from the community. The committee should be made up of a cross-section of the community, including aviation and non-aviation interests (business, public service and private individuals).

Additional Work (PACS & SACS)

In addition to the above planning work, the Consultant will perform a geodetic control survey to establish a basic control network for supplemental surveying, engineering, and mapping work on the airport. The establishment of geodetic control by permanent survey monuments in the airport vicinity will be accomplished by setting one PACS (Primary Airport Control Station), and two SACS (Secondary Airport Control Station). To do this Engineer will choose three sites that meet the requirements set forth by the FAA for PACS & SACS. Engineer will then submit site selection to the FAA for approval. Once approval for the PACS & SACS sites has been obtained Engineer will set a series of highly accurate and precise monuments on the pre-selected sites and obtain first order horizontal locations along with first order vertical tolerance elevations on these monuments. Lastly we will submit all of the location information from the new PACS & SACS to the FAA so the airport will be placed in the NGS (National Geodetic Survey) database for future use by aviators and managers. Work will be done in accordance with FAA Advisory Circular AC-150/5300-16, General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey.