Montana Airport Multimodal Study
Part II Analysis and Recommendations

by

Theodore Lane
Vice President & Principal

Thomas / Lane & Associates
Seattle, Washington

March, 1996

prepared for the

STATE OF MONTANA
DEPARTMENT OF TRANSPORTATION
RESEARCH, DEVELOPMENT & TECHNOLOGY TRANSFER PROGRAM

in cooperation with the

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TECHNICAL REPORT STANDARD PAGE

1. Report No. FHWA/MT-96/8111B	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Montana Airport Multimodal Study	5. Report Date March 1996 6. Performing Organization Code	
7. Author(s) Theodore Lane	8. Performing Organization Report No.	
9. Performing Organization Name and Address Thomas / Lane & Associates 2600 Harvard Avenue East Seattle, Washington 98102	10. Work Unit No 11. Contract or Grant No. 8111	
12. Sponsoring Agency Name and Address Montana Department of Transportation 2701 prospect Avenue P.O. Box 201001 Helena, MT 59620-1001	13. Type of Report and Period Covered Final 6/94-3/96 14. Sponsoring Agency Code 5401	

15. Supplementary Notes Research performed in cooperation with the Montana Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration.

16. Abstract

The report uses information from a household survey and an airport manager's survey conducted by the University of Montana's Bureau of Business and Economic Research (UM/BBER) to: [a] conduct a multimodal activity analysis that identifies and defines airport multimodal activity in Montana, [b] conduct a multimodal methods and strategies analysis, including the presentation of recommendations on methods and strategies to enhance airport multimodal activity, and [c] conduct a multimodal efficiency analysis that evaluates the potential benefits resulting from increased multimodalism at Montana's airports.

17. Key Words Montana Airports, Airports, Montana, Multimodal, Economic Efficiency		18. Distribution Statement No restrictions. This document is available to the public through NTIS, Springfield, Virginia 22161 Unrestricted. This document is available through the National Technical Information Service, Springfield, VA 21161.	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 33	22. Price

DISCLAIMER

The opinions, findings and conclusions expressed in this publication are those of the author and not necessarily those of the Montana Department of Transportation or the Federal Highway Administration

AMERICANS WITH DISABILITIES ACT ALTERNATIVE FORMAT STATEMENT

Persons with disabilities who need an alternative accessible format of this information, or who require some other reasonable accommodation in order to participate, should contact the Montana Department of Transportation, Attn.: Research manager, 2701 Prospect Avenue, Helena, MT 59620-1001; Telephone No. (406) 444-6269, TDD No. (406) 444-7696 or Fax No. (406) 444-6204. For more information, contact the MDT Personnel Services Section at (406) 444-3871.

ABSTRACT

The report uses information from a household survey and an airport manager's survey conducted by the University of Montana's Bureau of Business and Economic Research (UM/BBER) to: [a] conduct a multimodal activity analysis that identifies and defines airport multimodal activity in Montana, [b] conduct a multimodal methods and strategies analysis, including the presentation of recommendations on methods and strategies to enhance airport multimodal activity, and [c] conduct a multimodal efficiency analysis that evaluates the potential benefits resulting from increased multimodalism at Montana's airports.

CONTENTS

	page
Technical Report Documentation	ii
Disclaimer & Alternative Format	iii
Abstract	iv
Contents	v
1.0 Introduction	1
2.0 Multimodal Activity Analysis	2
2.1 Users of Aviation Transportation	2
2.2 Intra-State Aviation Transportation Patterns	4
2.3 Multimodal Airport Traveler Linkages	8
2.4 Other Multimodal Airport Linkages	9
3.0 Multimodal Methods & Strategies Analysis	10
3.1 Airport Stratification by Type & Number of Operations	10
3.2 Intermodal Services by Airport Type & Number of Operations	13
3.3 Analysis of Multimodal Methods & Strategies	17
3.4 Conclusions	18
3.5 Recommendations	19
4.0 Multimodal Efficiency Analysis	21
4.1 Potential Direct Benefits	21
Appendix 1: Quarterly Enplanements at Montana Commercial Service Airports	25
Appendix 2: Stratification & Selected Statistics for Montana Airports	27
Appendix 3: FAA Approximate Benefits for various Airport Activity Levels	31
References	33

MONTANA AIRPORT MULTIMODAL STUDY
PART II ANALYSIS & RECOMMENDATIONS

1.0 INTRODUCTION

The stated purpose of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) is,

> *"to develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the nation to compete in the global economy, and will move people and goods in an energy efficient manner."*

Multimodal transportation centers have existed throughout United States history. Train stations, airports and harbors have always provided travelers with some type of intermodal connection – whether it was for a horse drawn carriage, taxi, subway, private automobile, bus or limousine. These intermodal connections were seldom planned. They arose on a "catch as catch can" basis, primarily in response to some entrepreneur's perception of a profit making opportunity. By and large this system of market directed transportation linkages worked well, but occasionally travelers found themselves faced with cumbersome, inefficient arrangements. A business traveler might arrive in a city only to find he/she had to take a taxi from the hotel to the airport because that's where the only automobile rental agencies were located.

ISTEA signaled a shift in national transportation priorities: "*the need to obtain the optimum yield from existing resources, rather than relying solely on transportation expansion.*" (Huerta, 1994, iii). It explicitly recognized that improvements in any single transportation mode would likely have implications for other modes, and it required that (a) the full range of transportation alternatives be considered concurrently, and (b) such planning reflect the connection between transportation and the environment. In effect, "*the competing demands for greater mobility and environment protection must be met by planning, management, and maintenance rather than simply, as in the past, physical expansion.*" (Huerta, 1994, iii).

The University of Montana's Bureau of Business and Economic Research (UM/BBER) conducted an airport multimodal transportation study which included (a) interviews with Montana airport managers to obtain their opinions about issues they thought important for multimodal planning, and (b) telephone interviews with 1,225 Montana residents about activities and opinions concerning commercial aviation, general aviation, aviation planning, multimodal aspects, and related issues. This report uses the survey information collected by UM/BBER to:

- conduct a multimodal activity analysis which identifies and defines airport multimodal activity in Montana,
- conduct a multimodal methods and strategies analysis, including the presentation of recommendations on methods and strategies to enhance multimodal activity at airports, and
- conduct a multimodal efficiency analysis which evaluates the potential benefits that would result from increased multimodalism at Montana airports.

2.0 MULTIMODAL ACTIVITY ANALYSIS

This section presents a multimodal activity analysis which identifies and defines airport multimodal activity in Montana

2.1 USERS OF AVIATION TRANSPORTATION

An estimated 22.1 percent of Montana's adult population used air transportation services during the past year (Table 1). It appears that the majority of Montana residents use air transportation, primarily for out of state trips since 21 percent reported using air transportation but only 4.9 percent used air transportation while making a trip within Montana of 100 miles or more during 1994. (UM/BBER, Household Survey, 1995).

The characteristics of Montana residents who used air transportation services during 1994 are shown in Table 2. Air transportation users tended to be upper income (45 percent over $35,000 annual income) and well educated (38 percent college graduates). One out of every five (20 percent) of Montana residents who traveled by air during 1994 was retired.

Table 1
Distribution of Montana's Population
By Use of Airport Facilities & Services

Airport Non-Users	21.0%		
Airport Users	79.0%		
Travelers		22.1%	
Urban			18.1%
Rural			4.0%
Other Airport Users (Non-Travelers)		56.9%	
Urban			31.6%
Rural			25.3%

Source: UM/BBER Household Survey, 1995

Table 2
Characteristics of Resident Air Service Users

	Percent of Adult Population
Age	
18 24 yrs	5.6%
25-34 yrs	20.0%
35-44 yrs	20.9%
45-64 yrs	31.2%
65 + years	22.2%
Gender	
male	48.5%
female	51.9%
Income	
below $15,000	18.9%
$15-$34,999	36.1%
over $35,000	45.0%
Education	
some high school	4.4%
grad high school	36.6%
some college	21.7%
grad college	37.6%
Employment Status	
employed	69.4%
retired	20.0%
other	10.9%

Source: Thomas / Lane & Associates (TLA), from UM/BBER Household Survey (1995)

The UM/BBER survey asked airport users about their frequency of use. The final response category was "four or more times" – a response selected by about 30 percent of all airport users. Assuming – based on discussions with UM/BBER's survey manager – the mean value for this response category was a frequency of six times a year and that air transportation service users had the same trip frequency as all airport users, Montana residents accounted for about 505 thousand (or 52 percent) of total enplanements at the state's seven commercial service airports during 1994.

2.2 INTRA-STATE AVIATION TRANSPORTATION PATTERNS

The estimated number of total origins/destinations (O/Ds) at five of Montana's commercial airports are presented in Table 3 (Landum & Brown, 1992)) and provide further support for the conclusion that most Montana residents use air transportation for trips out of state while using surface transportation – primarily their own automobile –for in-state travel.

Table 3
Percent of In-State O/Ds at Selected Montana Airports: 1991

Missoula	6.4%
Billings	11.0%
Bozeman	< 1.0%
Great Falls	0.7%
Kalispell	4.8%

Source: Landrum & Brown, 1992

The pattern of intra-state operations between the seven commercial airports in Montana is shown in Table 4. Billings has the most direct intra-state flights (i.e., flights between city pairs where the traveler does not have to change airplanes) with 18 outbound flights and 16 inbound flights, Helena has the next most with 10 inbound and outbound flights each. Bozeman has the fewest direct intra-state flights with two outbound and three inbound flights.

Table 4
Direct Flights Between Montana Commercial Airports

FROM/TO	Billings	Bozeman	Butte	Great Falls	Helena	Glacier	Missoula	Total
Billings		1	3	4	4	3	1	16
Bozeman	1		0	0	0	1	1	3
Butte	4	0		0	3	0	0	7
Great Falls	4	0	0		2	0	1	7
Helena	4	0	4	2		0	0	10
Glacier	3	0	1	0	0		1	5
Missoula	2	1	0	1	1	2		7
Total	18	2	8	7	10	6	4	

Source: TLA. from Sabre Computer Reservation System (CRS) listings for the mid-week in August, 1995.

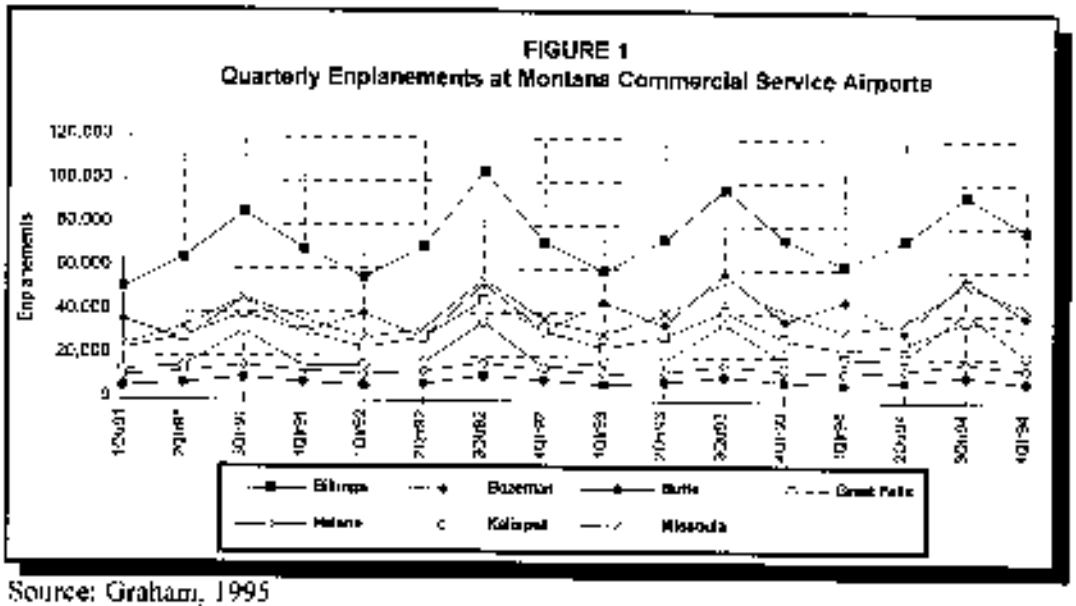
There are five essential air service (EAS) commercial airports in Montana with direct air service to Billings. The number of flights to/from Billings are shown in Table 5. Glasgow has three flights per day, and the other EAS cities have two flights a day.

Table 5
Direct Flights Between Billings and Montana EAS Commercial Airports

FROM/TO	Billings	Glasgow	Glendive	Lewistown	Sidney	Wolf Pt.	Total
Billings		3	2	2	2	2	11
Glasgow	3		0	0	0	0	3
Glendive	2	0		0	0	0	2
Lewistown	2	0	0		0	0	2
Sidney	2	0	0	0		0	2
Wolf Point	2	0	0	0	0		2
Total	11	3	2	2	2	2	

Source: TLA. from Sabre CRS listings for the mid-week in August, 1995.

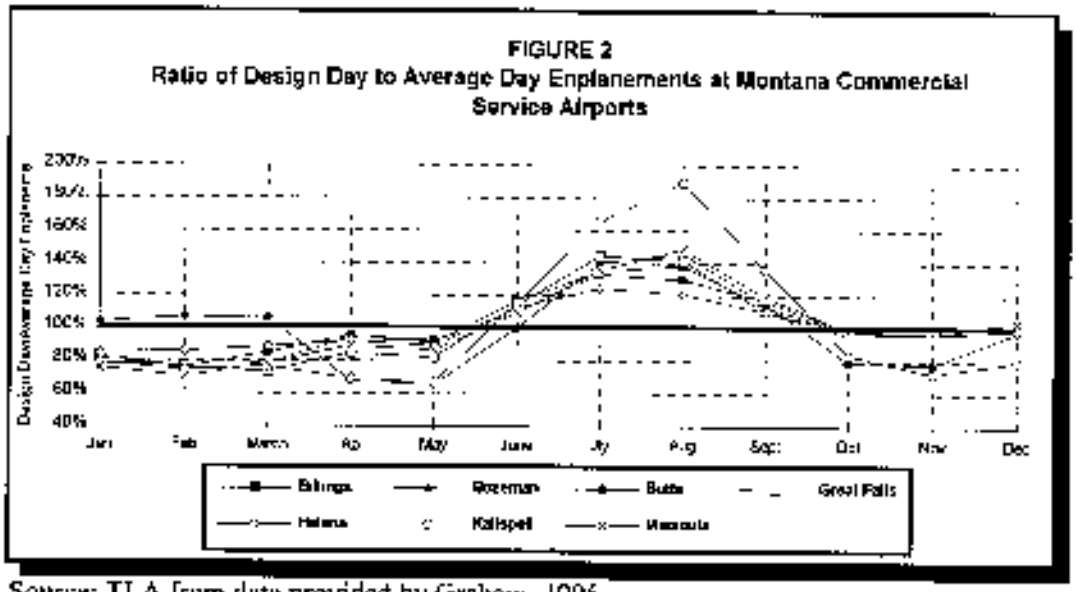
Enplanement trend data for Montana's seven commercial service airports for the years 1991 through 1994 were obtained from the Montana Airport Manager's Association (Graham, 1995) and are shown in Figure 1. (Graham, 1995).



Source: Graham, 1995

Billings shows the greatest number of enplanements and also exhibits a rising enplanement trend. Butte and Helena have the fewest enplanements and exhibit a generally flat trend. Bozeman, Kalispell and Missoula have moderately rising trends while Great Falls enplanements have exhibited a declining trend in recent years.

Figure 2 shows the seasonal pattern of Montana's seven commercial service airports – as measured by the ratio of design day to average day enplanements. (ratios calculated by TLA from data provided by Graham, 1995). Kalispell exhibits the greatest relative seasonal peak in enplanements while Helena exhibits the smallest relative seasonal enplanement peak. July and August are the peak relative enplanement months for all of the airports. Bozeman and Kalispell have a relative seasonal enplanement trough in April and May, while the other five airports have relative seasonal enplanement troughs in January and February.



Source: TLA from data provided by Graham, 1995

Among Montana resident users of air transportation passenger services, 88 percent traveled by scheduled carrier, 4 percent used air taxi/commuter service, and 8 percent used a charter carrier (Table 6). Among all Montana residents (transportation service users, other airport users, and non-users) 2 percent participated in flight instruction, and 4 percent used both small package and air cargo services (Table 7).

Table 6
Types of Air Passenger Service Used By Montana Resident Travelers

Scheduled Air Service	87.7%
Air Taxi/Commuter	3.9%
Air Charter	8.4%

Source: UM/BBER Household Survey, 1995

Table 7
Airport Services Used By Montana Residents (excluding passenger service)

Cargo Movements	
Small Freight	4.2%
Air Cargo	3.9%
Other Airport Uses	
Agricultural Service	2.0%
Emergency Medical	1.5%
Flight Instruction	2.2%
Aircraft Services	5.8%

Source: UM/BBER Household Survey, 1995

2.3 MULTIMODAL AIRPORT TRAVELER LINKAGES

Twenty two percent of Montana residents reported using some type of automobile related multimodal service at an airport (Table 8). The primary service used was airport parking (17 percent), with automobile rentals a distant second (5 percent). Travelers used automobile rental services slightly more frequently and airport parking slightly less frequently than all Montana residents who went to airports –reflecting the higher incidence of business transportation among travelers than the total population who go to airports to "see-off" or "pick-up" family members, pick-up/deliver small packages or air cargo, work on their own recreational aircraft or engage in other non-transportation related activities. This same pattern is shown in the transportation mode used by Montana residents to go to/from airports.

Table 8
Airport Automotive Multimodal Services Used By Montana Residents

	% Population	% Travelers
Total Automotive	21.9%	21.8%
Auto Rental	4.9%	6.3%
Courtesy Car	0.1%	0.0%
Automobile Parking	16.9%	15.5%

Source: UM/BBER Household Survey, 1995

Among potential transportation mode alternatives, private automotive transportation was the primary means used by Montana residents to get to/from airports in the state. Over ninety percent used their own cars while four percent or less used any other single transportation alternative (Table 9).

Table 9
Method of Transportation To Airport By Montana Residents

	% Pop	% Travelers
Personal Automobile	91.4%	90.8%
Courtesy/Corporate Car	2.7%	2.5%
Taxi	0.8%	2.5%
Bus	0.4%	0.0%
Shuttle/Van	0.9%	0.7%
Other	3.7%	3.5%

Source: UM/BBER Household Survey, 1995

The method of getting to an airport was virtually the same for all persons and for persons who were air transportation travelers, with the exception of the use of taxis. Travelers use of taxis was approximately three times greater than their use by all Montana residents going to airports (0.8 percent compared to 2.5 percent). This probably reflects the fact that business travelers use taxis more frequently than most Montana residents and business activity was a higher proportion of traveler activities than it was of the activities of all Montana residents.

The overall pattern which emerges is that the primary intermodal airport connections used by Montana residents are their private automobiles (UM/BBER Household Survey, 1995). Business, recreational and other travelers to the state use rental cars, taxis and, to a limited degree, busses. It is interesting to note that while few Montana residents use busses, shuttles or vans to get to/from airports (1.3 percent among all Montana residents and 0.7 percent among Montana resident travelers), private bus companies have found it economically viable to provide inter-city bus service at several of the state's commercial airports. From interviews with airport managers, it appears that this type of service is provided mainly during the summer and is primarily used by tourists coming to the state.

2.4 Other Multimodal Airport Linkages

Table 10 presents the results of an airport multimodal inventory (UM/BBER Household Survey, 1995). Car rentals, hotel shuttles and taxis are the most prevalent inter-model connections involving personal transportation. Equally prevalent is small package express service which interfaces air transportation with trucks for local deliveries. Busses and vans/limos are not widely reported. (UM/BBER Household Survey, 1995).

The UM/BBER Household Survey (1995) reported a total of almost 4,500 jobs and $79.4 million of wages and salaries are generated at, or dependent upon, Montana airports in 1994. About 94 percent of the airport related employment and 97 percent of the airport related income occurred at Montana's seven commercial airports. Among the commercial airports, Great Falls (32 percent of employment and 35 percent of income) and Billings (20 percent of employment and 23 percent of income) accounted for over half of the total economic activity.

Other than employment and income associated with car rentals and the other transportation activities reported in Table 10, the employment was related to either air transportation services

or government agencies (U.S. Forest Service, FAA, INS, etc.) and involved few intermodal connections.

Table 10
Multimodal Connections At Montana Commercial Airports

	car rental	taxi	charter bus	other bus	hotel shuttles	valet limo	package express
Billings	yes (4)	yes			yes		yes (3)
Bozeman	yes (4)	yes (2)	yes (3)		yes		yes (3)
Butte	yes (3)	yes			yes		yes (3)
Great Falls	yes (4)	yes		yes	yes		yes (3)
Helena	yes (3)	yes			yes		yes (3)
Kalispell	yes (4)	yes (2)			yes		yes (3)
Missoula	yes (4)	yes		yes	yes	yes	yes (3)

Source: UM/BBER Household Survey, 1995
Note: Numbers in parentheses are the number of companies providing the service.

3.0 Multimodal Methods & Strategies Analysis

This section presents a discussion of multimodal methods and strategies, including recommendations on methods and strategies to enhance multimodal activity at Montana airports.

3.1 Airport Stratification by Type & Number of Operations

Montana has over 125 public use airports. These airports can be categorized as [a] commercial airports, [b] Emergency Air Service (EAS) airports, [c] busy general aviation (GA) airports - defined as those reported to have over 8,000 operations a year, and [d] other GA airports. Table 11 shows the airports which fall into the first three categories.

Table 11
Montana Airports
Categorized by Type of Airport

Type of Airport	Type of Ownership	Airport Name	Associated City
Commercial Service	City	BERT MOONEY	Butte
Commercial Service	City	LOGAN INTERNATIONAL	Billings
Commercial Service	County	GALLATIN FIELD	Bozeman
Commercial Service	County	GLACIER PARK INTERNATIONAL	Kalispell
Commercial Service	City-County	GTF INTERNATIONAL	Great Falls
Commercial Service	City-County	HELENA REGIONAL AIRPORT	Helena
Commercial Service	City-County	MISSOULA	Missoula
Commercial Service	State	WEST YELLOWSTONE	
EAS Airports	City	FRANK WILEY FIELD	Miles City
EAS Airports	County	DAWSON COMMUNITY	Glendive
EAS Airports	County	HAVRE CITY-COUNTY AIRPORT	Havre
EAS Airports	City-County	WOKAL FIELD	Glasgow
EAS Airports	City-County	LEWISTOWN MUNICIPAL	Lewiston
EAS Airports	City-County	SIDNEY-RICHLAND MUNICIPAL	Sidney
EAS Airports	City-County	L. M .CLAYTON	Wolf Point
"Busy" General Aviation	City	KALISPELL CITY AIRPORT	Kalispell
"Busy" General Aviation	City	LAUREL MUNICIPAL	Laurel
"Busy" General Aviation	City	STEVENSVILLE	Stevensville
"Busy" General Aviation	County	ENNIS-BIG SKY AIRPORT	Ennis
"Busy" General Aviation	County	DILLON	Dillon
"Busy" General Aviation	County	RAVALLI COUNTY AIRPORT	Hamilton
"Busy" General Aviation	County	THREE FORKS	Three Forks
"Busy" General Aviation	County	TILLITT FIELD	Forsyth
"Busy" General Aviation	County	GARDINER	Gardiner
"Busy" General Aviation	City-County	EDGAR G. DBIE	Chinook
"Busy" General Aviation	City-County	LIBBY AIRPORT	Libby
"Busy" General Aviation	City-County	SHER-WOOD AIRPORT	Plentywood

Source: TLA

The first category contains the state's seven year-around commercial service airports plus West Yellowstone which is open between the months of June and September, and is owned and operated by the Montana Aeronautics Division, Montana Department of Transportation (MDT).

Commercial flights into West Yellowstone are exclusively from/to out-of-state origins/destinations and primarily serve out of state tourists going to Yellowstone National Park. The seven other commercial service airports have both interstate and intrastate commercial service.

The second category contains Montana's seven EAS airports. They are served by regional commuter airlines providing service to/from Logan International Airport in Billings. The third category contains the 12 airports in the state classified as "busy" GA airports and are reported to have over 8,000 operations a year. These airports have no commercial (carrier or commuter) service, but may have charter service.

There are almost 100 "other" GA airports in Montana, and they range in size from Red Lodge, Columbus and Polson airports which have 7,000 or more operations a year to Ross International, Tiber Dam and Whetstone International airports which have under 100 operations a year. Sixteen of these "other" GA airports are reported to have 5,000 or more operations a year; these are shown in Table 12.

Table 12
Montana "Other" GA Airports With 5,000 Or More Reported Operations

Type of Airport	Type of Ownership	Airport Name	Associated City
"Other" General Aviation	City	COLUMBUS	Columbus
"Other" General Aviation	County	FERNDALE	Big Fork
"Other" General Aviation	County	WHITE SULFUR SPRINGS	White Sulfur Springs
"Other" General Aviation	County	BROADUS	Broadus
Other" General Aviation	County	FAIRGROUNDS AIRPARK	Hardin
"Other" General Aviation	City-County	RED LODGE	Red Lodge
"Other" General Aviation	City-County	POLSON	Polson
"Other" General Aviation	City-County	SCOBEY	Scobey
"Other" General Aviation	City-County	BAKER	Baker
"Other" General Aviation	City-County	BIG TIMBER	Big Timber
"Other" General Aviation	City-County	BOWMAN	Anaconda
"Other" General Aviation	City-County	POPLAR	Poplar
"Other" General Aviation	City-County	CUT BANK	Cut Bank
"Other" General Aviation	City-County	FORT BENTON	Fort Benton
"Other" General Aviation	City-County	BIG SANDY	Big Sandy
"Other" General Aviation	City-County	SHELBY	Shelby

Source: TLA

The UM/BBER conducted a mail (with telephone follow-up) -general aviation airport managers survey using the 12 "busy" GA airports and the 16 "other" GA airports with 5,000 or more reported operations as a sample. Four of the 12 "busy" GA airport managers and three of the 16 "other" GA airport managers responded. (UM/BBER Airport Managers Survey, 1995).

3.2 Intermodal Services by Airport Type & Number of Operations

The different types intermodal connections at Montana airports are summarized in Table 13.

Table 13
Intermodal Interfaces Used at Different Types of Airports

Methods/Strategies to Enhance Intermodal Interfaces	Commercial Service Airports	EAS Commercial Service Airports	Busy General Aviation Airports	Other General Aviation Airports
Car Rental	8	5	4	2
City Bus	1	0	0	0
InterCity Bus	3	0	0	0
Van/Limo	7	0	0	0
Taxi	8	5	3	1
Courtesy Car	0	4	6	2
Total Possible Airports	8	7	12	16

Source: TLA and UM/BBER Airport Managers Survey (1995)

All eight of the commercial service airports and five of the seven EAS commercial service airports provide car rentals and taxi facilities. Seven of the eight commercial service airports also provide for-hire van/limo services, but this type of intermodal interface is not provided at any of the EAS commercial service airports. Among the eight commercial service airports, one has city bus service and three have intercity bus service, while none offer the use of a courtesy car. Among the seven EAS commercial service airports, none have any type of bus service but four of the seven offer courtesy cars.

None of the GA airports offer any type of bus or for-hire van/limo service. Among the 12 "busy" GA airports, four offer car rentals, three have taxi facilities, and six provide courtesy cars. Among the 16 "other" GA airports that reported 5,000 or more operations, two have car rentals, one has a taxi facility and two offer courtesy cars.

All of the commercial EAS and GA airports have hotel shuttles and taxis which respond to telephone requests. These intermodal services are provided by the hotels and taxi companies in the same fee-for-service manner that they provide service to all local residents and travelers. These types of intermodal connections are not analyzed as services provided to travelers by the state's airports.

Table 14 presents the intermodal service linkages existing at each of the state's commercial service airports. All offer car rentals and all have facilities for taxi queuing. All except West Yellowstone have for-hire van/limo service. The Missoula city bus goes along the highway in front of the airport. It will go up to the terminal if requested, but the airport is not on its scheduled route. None of the other commercial service airports have links to city bus systems. The airports at Bozeman, Great Falls and Missoula are served by one or more of the state's intercity bus/stage companies. The Helena Regional Airport was reported to have a terminal access road that will not accommodate large busses. The other commercial service airports, although they do not have intercity bus service, do not appear to have any structural impediments to large busses.

Table 14
Intermodal Linkages at Montana's Commercial Service Airports

Airport Name	Location	Intermodal Transportation Linkages					
		Car Rental	City Bus	Inter City Bus	Limo	Taxi	Courtesy Car
BERT MOONEY	BUTTE	Yes			Yes	Yes	
LOGAN INTERNATIONAL	BILLINGS	Yes			Yes	Yes	
GALLATIN FIELD	BOZEMAN	Yes		Yes	Yes	Yes	
GLACIER PARK INTERNATIONAL	KALISPELL	Yes			Yes	Yes	
GTF INTERNATIONAL	GREAT FALLS	Yes		Yes	Yes	Yes	
HELENA REGIONAL AIRPORT	HELENA	Yes			Yes	Yes	
MISSOULA	MISSOULA	Yes	Yes	Yes	Yes	Yes	
WEST YELLOWSTONE	W. YELLOWSTONE	Yes				Yes	

Source: TLA and UM/BHER Airport Managers Survey, 1995

Table 15 presents the intermodal service linkages existing at each of the state's EAS commercial service airports. None of the seven EAS commercial service airports have city bus, intercity bus or for-hire van/limo service available. The airports at Miles City, Glendive, Glasgow, Sidney

and Wolf Point have car rental available, while the airports at Havre and Lewistown do not. Miles City, Glendive, Glasgow, Lewistown and Sidney have taxi services available, while the airports at Havre and Wolf Point do not. Among the seven EAS commercial service airports, courtesy cars are available at the following four airports: Dawson Community (Glendive), Havre City-County (Havre), Lewiston and Sidney-Richland Municipal (Sidney).

Table 15
Intermodal Linkages at Montana's EAS Commercial Service Airports

Airport Name	Location	Intermodal Transportation Linkages					
		Car Rental	City Bus	Inter City Bus	Limo	Taxi	Courtesy Car
FRANK WILEY FIELD	MILES CITY	Yes				Yes	
DAWSON COMMUNITY	GLENDIVE	Yes				Yes	Yes
HAVRE CITY-COUNTY AIRPORT	HAVRE						Yes
WOKAL FIELD	GLASGOW	Yes				Yes	
LEWISTOWN	LEWISTOWN					Yes	Yes
SIDNEY-RICHLAND MUNICIPAL	SIDNEY	Yes				Yes	Yes
WOLF POINT	WOLF POINT	Yes					

Source: TLA and UM/BBER Airport Managers Survey, 1995

Table 16 presents the intermodal service linkages existing at each of Montana's busy GA airports. Two of the state's 12 busy GA airports, Stevensville and Big Sky (located at Ennis) have no intermodal linkages other than the use of some type of private, personal vehicle. Five other airports (Laurel, Three Forks, Gardiner, Edgar G. Obie (located at Chinook) and Libby) offer courtesy cars but do not have commercial intermodal transportation linkages. Kalispell City Airport - the busiest GA airport in the state with over 33 thousand operations - and Ravalli County Airport – the second busiest GA airport in Montana with over 18 thousand operations – both have car rental facilities, as do the smaller airports at Forsyth (Tillitt Field) and Plentywood (Sher-Wood Airport). Taxi facilities are available at Kalispell City, Dillon and Sher-Wood Airports.

Table 17 presents the intermodal service linkages at each of Montana's 16 "other GA airports" sampled. Three of the 16 other GA airports – Red Lodge, Fairgrounds Airpark (located at Hardin) and Cut Bank have car rental services. Red Lodge also has taxi facilities. Baker and

Table 16
Intermodal Linkages at Montana's Busy GA Airports

Airport Name	Location	Intermodal Transportation Linkages					
		Car Rental	City Bus	Inter City Bus	Limo	Taxi	Courtesy Car
KALISPELL CITY AIRPORT	KALISPELL	Yes				Yes	
LAUREL	LAUREL						Yes
STEVENSVILLE	STEVENSVILLE						
BIG SKY (ENNIS) AIRPORT	ENNIS						
DILLON	DILLON					Yes	
RAVALLI CO. AIRPORT	HAMILTON	Yes					
THREE FORKS	THREE FORKS						Yes
TILLITT FIELD	FORSYTH	Yes					Yes
GARDINER	GARDINER						Yes
EDGAR G. OBIE	CHINOOK						Yes
LIBBY AIRPORT	LIBBY						Yes
SHER-WOOD AIRPORT	PLENTYWOOD	Yes				Yes	

Source: TLA and UM/BBER Airport Managers Survey, 1995

Table 17
Intermodal Linkages at Montana's Other GA Airports

Airport Name	Location	Intermodal Transportation Linkages					
		Car Rental	City Bus	Inter City Bus	Limo	Taxi	Courtesy Car
RED LODGE	RED LODGE	Yes				Yes	
COLUMBUS	COLUMBUS						
POLSON	POLSON						
SCOBEY	SCOBEY						
BAKER	BAKER						Yes
FERNDALE	BIG FORK						
BIG TIMBER	BIG TIMBER						
FAIRGROUNDS AIRPARK	HARDIN	Yes					
BOWMAN	ANACONDA						
POPLAR	POPLAR						
CUT BANK	CUT BANK	Yes					
FORT BENTON	FORT BENTON						
BIG SANDY	BIG SANDY						
BROADUS	BROADUS						Yes
SHELBY	SHELBY						
WHITE SULFUR SPRINGS	WHITE SULFUR SPRINGS						

Source: TLA and UM/BBER Airport Managers Survey (1995)

Airport managers were asked whether or not local residents would use multimodal recreational facilities (such as trails for jogging, bicycling, snowmobiling, or cross country skiing) if they were available (UM/BBER Airport Managers Survey, 1995). Three of the four "Busy" GA airport managers that responded felt there was no local interest, and the fourth responded that he did not know if any interest existed. Among the three "Other" GA airports reporting 5,000 or more operations, one responded there was no interest, one responded there was very likely interest in jogging and bicycle trails, and the third responded there was some interest in snowmobile and cross-country ski trails.

3.3 Analysis of Multimodal Methods and Strategies

The most prevalent airport intermodal connection used in Montana is private, personally owned automobile transportation. Over 91 percent of persons who went to airports in the state said they used their own automobiles to get there. (UM/BBER Household Survey, 1995) Reflecting the prevalence of private automobile transportation, all of the state's commercial service airports, excluding West Yellowstone, provide adequate parking for personally owned cars.

Montana residents overwhelmingly use their own cars for travel within the state. Four out of five Montana households (83 percent) took an in-state trip of 100 miles or more during the prior 12 months. Two thirds (68 percent) of these trips were for pleasure, and just under one third (28 percent) for business. Over 92 percent of these in-state travelers said they used their own cars, and 99 percent said they would not have used air transportation even if suitable direct or connecting service had been available. (UM/BBER Household Survey, 1995).

Fewer than one percent of Montana's households use taxies, buses or shuttle vans to go to/from an airport. (UM/BBER Household Survey, 1995). These types of multimodel airport connections cater primarily to out-of-state visitors to Montana. The same is true for the car rental companies located at the commercial service airport.

Inter-city bus service catering primarily to recreational travelers visiting Montana's state and national park lands is available at three of the commercial airports. The terminal access road at Helena (which does not currently have bus service) will have to be modified if busses are to be accommodated.

There is little demand for local bus service in Montana's urban areas and little is supplied. This is reflected in the general lack of local bus connections at airports.

Among Montana's seven EAS airports, Havre City-County Airport has no for-hire intermodal connections available, the airport does however have a courtesy car. Lewistown Airport has taxi facilities but no car rental services; and Wolf Point Airport has no taxi facilities but does have a car rental company at the terminal.

Of the 12 busy GA airports in Montana, only five had any type of for-hire multimodal transportation available. Six had courtesy cars. One had no type of intermodal transportation service (except for a parking area for private automobiles).

Among the 16 "other" GA airports which reported 5,000 or more operations, the availability of intermodal transportation connections was the exception rather than the rule. Only three of the airports had car rental services, one had taxi facilities and two had courtesy cars available.

3.4 Conclusions

These findings give rise to the following conclusions regarding multimodal connections at Montana airports.

(a) Montana residents overwhelmingly use their own cars for within state travel, including travel to and from airports. As a result, the primary multimodal airport facilities provided for, and used by, Montana residents are automobile parking areas.

(b) With the exception of West Yellowstone, all the commercial service airports have car rental, van/limo and taxi facilities; and three of the eight commercial service airports provide some type of inter-city bus service.

Although there were no survey based data on the use of multimodal facilities by out-of-state visitors, information obtained from interviews with airport managers and airline staffs indicate that the demand for taxis and car rentals is mainly generated by business/government travelers while intercity bus and van/limo service is primarily demanded by tourists coming to Montana to visit its National Parks and Monuments.

government travelers while intercity bus and van/limo service is primarily demanded by tourists coming to Montana to visit its National Parks and Monuments.

(c) There were no survey data available on either instate or out-of-state passenger travel patterns at Montana's seven EAS airports. However given the pattern of private auto use by Montana residents, rental car and taxi use by out-of-state business/government travelers, and van/limo and intercity bus use by tourists discussed above, it appears that relatively few tourists use these airports. All have some type of automobile parking facility (local travelers) and either taxi or car rental facilities (out-of-state business/ government travelers) but none have intercity bus or van/limo facilities (tourists).

(d) Although very few survey questionnaires were returned by GA airport managers, the ones that were returned reported that somewhere between 95 and 100 percent of all GA airport users reached the airport by private automobile.

(e) When GA airports were stratified by the ratio of local to transient operations, there was some indication that commercial multimodal facilities occur more frequently at airports that have a higher proportion of fly-in visitors. For example, among the state's "busy" GA airports, there were three (Dillon, Gardiner and Kalispell City) where the ratio of local to local plus itinerant operations was less than half (0.5). Two of these three airports had some type of commercial intermodal facilities. Two of the "busy" GA airports had a local operations ratio of two thirds (0.65) or more and neither had any commercial multimodal facilities. A similar pattern was true for the "other" GA airports that reported 5,000 or more annual operations. Seven of these airports had a local operations ratio of less than half and two of them had some type of commercial multimodal facilities. Seven additional airports had a local operations ratio of two thirds or higher and none had any commercial multimodal facilities.

3.5 Recommendations

Recommendations for improving the efficiency of multimodal transportation linkages at Montana airports are of necessity limited and general. Multimodal linkages such as car rentals, taxis and intercity busses are mainly used by out-of-state travelers. There were no survey data on these travelers, and relatively little can be said about their travel requirements other than some

general information gathered during visits to selected Montana airports and interviews with airport managers.

- An inventory of access roads at the state's seven commercial service airports should be conducted to assure that the airport terminals can be reached by inter-city and tour buses.

- Commercial airports should be encouraged to determine the market viability of entering into agreements with one or more inter-city bus companies to provide, at a minimum, tour bus service during the peak visitor months of June through September.

- Not withstanding the uncertainty surrounding the state's EAS airports; the market feasibility for car rental services at the Havre and Lewistown EAS airports and for taxi facilities at Havre and Wolf Point airports should be determine; and if feasible, these airports should develop the necessary facilities and enter into agreements with private transportation operators to provide such services.

- For those EAS airports which experience significant recreational summer passenger peaks, the feasibility of establishing summer inter-city/tour bus service should be investigated. This could be done by distributing a simple questionnaire to all departing travelers while they are in the airport waiting areas asking about their origins, destinations and transportation preferences. The sample survey information would than be reviewed with private operators of inter-city/tour bus services to see if they think the market is sufficient to warrant commercial service.

- Intermodal connections at both Montana's busy and other GA airports appears to be largely market driven and determined mostly by each airport's number of itinerant operations and based aircraft. Montana Aeronautics Division, MDT, should consider sponsoring a multimodal planning conference for GA airport managers to assist them in preparing to take advantage of possible intermodal linkage opportunities that may arise.

- Finally, consideration should be given to developing recreational multimodal facilities at some of Montana's "other" GA airports. Only three "other" GA airport managers responded to the UM/BBER survey, but two of the three responded that local residents would likely use recreational jogging, bicycling or cross county ski trails if they were developed. (UM/BBER Airport Managers Survey, 1995). A prototype recreational

multimodal development program could be developed by Montana Aeronautics Division, MDT, at those airports where the managers indicated there was local interest. Montana Aeronautics Division, MDT should work with Fairview Airport, Sidney, to develop bicycle and walking/jogging trails and with Ronan Airport, Polson, to develop cross country ski trails. If these prototypes prove successful and are both used and supported by local residents, similar facilities could be developed at other GA airports where airport managers feel that local residents would use the facilities.

4.0 Multimodal Efficiency Analysis

This section conducts a multimodal efficiency analysis and evaluates the potential benefits that would result from increased multimodalism at GA airports on the part of Montana residents.

4.1 Potential Direct Benefits

FAA document DOT/FAA/PP-92-6, *Estimating the Regional Significance of Airports*, (Butler and Kiernan, 1992) defines the primary benefits of an airport as "the time saved and cost avoided by travelers who use it over the next best alternative." (Butler and Kiernan, 1992, page 5) This definition is used as the basis for estimating potential direct benefits of increased multimodal airport use by Montana residents.

Approximately 92 percent of Montana residents who took an in-state trip of 100 miles or more during the prior 12 months used their own automobiles. (UM/BBER, Household Survey, 1995) The average urban Montana resident lived eight miles from an airport and ten miles from an airport with schedules commercial service, while the average rural resident lived 12 miles from an airport and 53 miles from an airport with scheduled commercial service. (UM/BBER, Household Survey, 1995) Finally, 99 percent of the persons who had taken an intrastate trip of 100 miles or more during the prior 12 months said they would not have used air service even if direct or suitable connecting service had been available. (UM/BBER, Household Survey, 1995).

This information leads to the conclusions (a) that Montana residents primarily use air transportation for out-of-state trips, (b) the choice faced by the average urban resident between

an eight mile trip to the nearest airport or a 12 mile trip to the nearest airport with scheduled commercial service is a difference of less than six minutes of driving (at 45 miles an hour) and this is to small a potential saving to cause anyone to change their choice of transportation mode, and (c) the 41 mile difference between the average rural resident's 12 miles to the nearest airport and 53 miles to the nearest airport with scheduled air service represents the potential for generating direct efficiency benefits from multimodal travel at the state's GA airports. These direct efficiency benefits would result from the difference in the time it takes a rural interstate traveler to drive to the airport nearest his/her place of residence and to the nearest commercial service airport.

DOT/FAA/PP-92-6 (Butler and Kiernan, 1992) contains benefit tables for airports (a) with and without commercial operations, (b) with different based aircraft levels, and (c) with different reductions in the distance traveled to the nearest airport. (Appendix 3)

In the sample of 12 "busy" GA airports and 15 "other" GA airports reporting 5,000 or more annual operations, (a) none had commercial operation, (b) there was an average of 22 based aircraft, or 18 if Hamilton, Kalispell City and Stevensville airports (the only three with 40 or more based aircraft) are omitted, and (c) the average potential reduction in distance traveled is taken to be the same as the average for all rural GA airports is the state – 41 miles. From the table in Appendix 3, an airport with no commercial service, 20 based aircraft and a reduction in distance to airport of 20 miles has $246,600 in total annual benefits. The reduction in distance traveled for the average GA airport in Montana was 41 miles. The ratio of the reduction in distance traveled for the average GA airport in Montana divided by the reduction shown in the table (or, 41 divided by 20) multiplied by the total annual benefits shown in the table ($246,600) gives the annual direct time saving (efficiency) benefit per airport that would result from rural Montana residents driving to their nearest GA airport and taking an air taxi or scheduled commuter when taking an out-of-state trip instead of driving an average of 53 miles to the nearest commercial service airport. The dollar value of this time saving (efficiency) benefit is $503,480.

As discussed earlier (Section 2.1, page 4, first paragraph), an estimated 505 thousand commercial aircraft enplanements were generated by Montana residents during 1994. Rural residents accounted for 91.8 thousand (18.2 percent) of these enplanements. (UM/BBER

Household Survey, 1995). Also, approximately 28.4 percent of air transportation travelers traveled primarily for business. (UM/BBER Household Survey, 1995). Applying the 28.4 percentage for business travelers to the 505 thousand total rural commercial air transportation travelers gives an estimate of 26.1 thousand rural business travelers using commercial air transportation services.

About a quarter (23.5 percent) of Montana's business travelers reported traveling for both business and pleasure, and most of these travelers would use their own cars, according to survey responses regarding how pleasure travelers prefer to travel. Other rural business travelers are driven the average 53 miles to the closest commercial service airport by family or friends, and most would not use connecting air taxi or scheduled commuter service even if it were available. The most probable estimate of the proportion of rural business travelers that might use air taxi or scheduled commuter service from a close GA airport, therefore, is in the range of 50 to 75 percent. If the lower (50 percent) end of the range is used, the estimated number of rural business travelers is 13.1 thousand and the benefits per traveler would be about $39 (calculated as follows: the dollar value of the efficiency benefit of $503,480 is divided by 50 percent of the 26,100 business travelers, or [$503,480 ÷ (0.5 x 26,100)] = [$503,480 ÷ 13,050] = $38.58). If the upper (75 percent) end of the range is used, the estimated number of rural business travelers is 19.6 thousand and the benefits per traveler would be about $26 (calculated as follows: the dollar value of the efficiency benefit of $503,480 is divided by 75 percent of the 26,100 business travelers, or [$503,480 ÷ (.75 x 26,100)] = [$503,480 ÷ 19,575] = $25.72)..

About 24 percent of Montana residents would be willing to pay $25 or more to fly rather than use an alternative mode of transportation, while only about 13 percent would be willing to pay $50 or more. An additional 43 percent did not know how much they would be willing to pay. (UM/BBER Household Survey, 1995). While hard data do not exist about the average cost be trip that a commercial air taxi or scheduled commuter operator in Montana would have to charge per "average" trip from a feeder GA airport to a commercial service airport, reported data about the costs of EAS operations and opinions expressed during interviews with airport personnel at selected Montana airports make it unlikely that round trip fares for commuter service would be in the range of $26 to $39 – the average value of the service to a Montana resident.

The conclusion which emerges from the above analysis, therefore, is that although significant time saving (efficiency) benefits would be derived from increased multimodalism at Montana's GA airports, the dollar value of these benefits is not large enough to support a market driven, privately operated, air transportation system at the present time.

Appendix 1

Quarterly Enplanements at Montana's Commercial Service Airports

Quarterly & Annual Enplancments at Montana's Six Commercial Service Airports

	Billings	Bozeman	Butte	Great Falls	Helena	Kalispell	Missoula
1Qtr 1991	51,402	36,597	6,559	23,259	11,271	13,929	24,860
2Qtr 1991	65,061	27,649	8,059	28,953	12,999	15,480	33,507
3Qtr 1991	85,739	46,738	10,604	39,698	16,068	31,723	46,788
4Qtr 1991	69,084	30,685	8,514	31,108	13,601	15,520	36,789
Annual Total	271,286	141,669	33,736	123,018	53,939	76,652	141,944
1Qtr 1992	55,903	39,556	6,884	23,974	11,945	16,010	28,340
2Qtr 1992	70,550	28,401	7,707	28,755	13,619	17,117	32,824
3Qtr 1992	104,943	53,155	11,551	45,724	17,234	35,788	55,324
4Qtr 1992	72,265	31,866	9,408	31,759	14,320	15,038	36,839
Annual Total	303,661	152,978	35,550	130,212	57,118	83,953	153,327
1Qtr 1993	59,156	44,884	7,546	23,958	12,450	17,683	30,330
2Qtr 1993	73,625	34,594	8,757	29,295	13,239	18,128	39,772
3Qtr 1993	97,095	58,269	11,357	40,918	16,282	35,247	54,354
4Qtr 1993	73,979	36,509	9,082	28,205	14,205	18,432	40,698
Annual Total	303,855	174,256	36,742	122,376	56,176	89,490	165,154
1Qtr94	61,866	45,633	7,848	23,510	12,971	18,941	31,899
2Qtr94	73,762	31,679	9,331	26,087	14,633	20,398	36,255
3Qtr94	94,551	56,261	12,180	37,141	17,501	41,225	53,864
4Qtr94	78,314	38,929	9,091	33,068	15,308	21,151	43,073
Annual Total	308,493	172,502	38,450	119,806	60,813	101,715	165,091

Source: TLA, from data provided by Graham, 1995

Appendix 2

Stratification & Selected Statistics for Montana Airports

Type of Airport	Type of Ownership	Airport Name	LOCATION		NUMBER OF OPERATIONS PER YEAR					AIRPORT SERVICES			INTERMODAL TRANSPORTATION SERVICES					
			County	City/Town	Total	Carrier	Commuter	Air Taxi & GA	Military	Fuel	Repairs		Car Rental	City	Inter City Bus	Limo	Taxi	Courtesy Car
											Major	Minor						
Commercial Service	City	BERT MOONEY	SILVER BOW	BUTTE	28,895	4,830	0	13,675	386	Yes	Yes		Yes			Yes	Yes	
Commercial Service	City	LOGAN INTERNATIONAL	YELLOWSTONE	BILLINGS	105,665	12,212	0	92,810	618	Yes	Yes		Yes			Yes	Yes	
Commercial Service	County	GALLATIN FIELD	GALLATIN	BOZEMAN	42,254	13,168	n/a	28,600	486	Yes	Yes		Yes		Yes	Yes	Yes	
Commercial Service	County	GLACIER PARK INTERNAT'L	FLATHEAD	KALISPELL	45,515	2,010	9,495	34,056	954	Yes	Yes		Yes			Yes	Yes	
Commercial Service	City-County	G.T. INTERNATIONAL	CASCADE	GREAT FALLS	57,558	6,348	6,563	16,672	28,000	Yes	Yes		Yes		Yes	Yes	Yes	
Commercial Service	City-County	HELENA REGIONAL AIRPORT	LEWIS & CLARK	HELENA	27,471	2,148	0	52,445	12,840	Yes	Yes		Yes			Yes	Yes	
Commercial Service	City-County	MISSOULA	MISSOULA	MISSOULA	69,871	4,989	0	64,420	458	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Commercial Service	State of Montana	WEST YELLOWSTONE	GLACIER	WEST YELLOWSTONE	n/a	n/a	n/a	n/a	n/a	Yes			Yes				Yes	
EAS Commercial Service	City	FRANK WILTY FIELD	CUSTER	MILES CITY	10,383	0	1,248	9,140	0	Yes	Yes		Yes				Yes	
EAS Commercial Service	County	DAWSON COMMUNITY	DAWSON	GLENDIVE	1,616	0	1,156	9,405	35	Yes	Yes		Yes				Yes	Yes
EAS Commercial Service	County	HAVRE CITY-CO. AIRPORT	CITY & HILL	HAVRE	8,238	0	1,240	7,050	48	Yes	Yes							Yes
EAS Commercial Service	City-County	WORAL FIELD	VALLEY	GLASGOW	21,541	0	1,248	20,139	160	Yes	Yes		Yes				Yes	
EAS Commercial Service	City-County	LEWISTOWN	FERGUS	LEWISTOWN	13,520	0	2,520	14,500	500	Yes	Yes						Yes	Yes
EAS Commercial Service	City-County	SIDNEY-RICHLAND MUNIP.	RICHLAND	SIDNEY	23,150	0	900	21,850	0	Yes	Yes		Yes				Yes	Yes
EAS Commercial Service	City-County	WOLF POINT	ROOSEVELT	WOLF POINT	5,040	0	990	4,070	0	Yes	Yes		Yes					
"Busy" General Aviation	City	KALISPELL CITY AIRPORT	FLATHEAD	KALISPELL	35,300	0	0	33,150	1,000	Yes	Yes		Yes				Yes	
"Busy" General Aviation	City	LAUREL	YELLOWSTONE	LAUREL	12,300	0	0	9,250	3,000	Yes	Yes							Yes
"Busy" General Aviation	City	STEVENSVILLE	RAVALLI	STEVENSVILLE	10,600	0	0	10,000	0	Yes	Yes							
"Busy" General Aviation	County	BIG SKY (ENNIS) AIRPORT	MADISON	ENNIS	10,515	0	0	10,515	0	Yes	Yes							
"Busy" General Aviation	County	DILLON	BEAVERHEAD	DILLON	9,800	0	0	9,780	20	Yes	Yes						Yes	
"Busy" General Aviation	County	RAVALLI COUNTY AIRPORT	RAVALLI	HAMILTON	18,200	0	0	18,200	0	Yes	Yes		Yes					
"Busy" General Aviation	County	THREE FORKS	GALLATIN	THREE FORKS	9,480	0	0	8,480	1,000	Yes	Yes							Yes
"Busy" General Aviation	County	TILLETT FIELD	ROSEBUD	FORSYTH	8,312	0	0	8,300	12	Yes	Yes		Yes					Yes
"Busy" General Aviation	County	GARDINER	PARK	GARDINER	8,100	0	0	8,100	0	Yes	Yes							Yes
"Busy" General Aviation	City-County	EDGAR G. ORR	BLAINE	CHINOOK	8,550	0	0	8,550	0	Yes		Yes						Yes
"Busy" General Aviation	City-County	LIBBY AIRPORT	LINCOLN	LIBBY	11,000	0	0	11,000	0	Yes								Yes
"Busy" General Aviation	City-County	SKER-WOOD AIRPORT	SHERIDAN	PLENTYWOOD	11,260	0	0	11,250	10	Yes			Yes				Yes	
"Other" General Aviation	City	CHOTEAU	TETON	CHOTEAU	1,575	0	0	1,575	0		Yes							
"Other" General Aviation	City	COLUMBUS	STILLWATER	COLUMBUS	2,250	0	0	2,250	0	Yes	Yes							
"Other" General Aviation	City	DENTON	CHOTEAU	DENTON	400	0	0	400	0									
"Other" General Aviation	City	VALIER	PONDERA	VALIER	n/a	n/a	n/a	n/a	n/a									
"Other" General Aviation	City	WHITEFISH	FLATHEAD	WHITEFISH	800	0	0	800	0									
"Other" General Aviation	County	AUGUSTA	LEWIS & CLARK	AUGUSTA	245	0	0	245	0									
"Other" General Aviation	County	BELLE CREEK	POWDER RIVER	BELLE CREEK	500	0	0	500	0									
"Other" General Aviation	County	BORDER CROSSING	PHILLIPS	MORGAN	n/a	n/a	n/a	n/a	n/a									
"Other" General Aviation	County	BROADUS	CARTER	BROADUS	5,150	0	0	5,150	0	Yes	Yes							Yes
"Other" General Aviation	County	CHICO	PARK	CHICO HOT SPRINGS	n/a	n/a	n/a	n/a	n/a									
"Other" General Aviation	County	COLSTRIP	ROSEBUD	COLSTRIP	3,500	0	0	3,300	0	Yes								
"Other" General Aviation	County	CONRAD	PONDERA	CONRAD	3,500	0	0	3,400	100	Yes								
"Other" General Aviation	County	DRUMMOND	GRANITE	DRUMMOND	150	0	0	150	0									
"Other" General Aviation	County	EKALAKA	CARTER	EKALAKA	0	0	0	0	0									
"Other" General Aviation	County	EUREKA	LINCOLN	EUREKA	2,900	0	0	1,900	0				Yes					
"Other" General Aviation	County	FAIRGROUNDS AIRPARK	BIG HORN	HARDIN	6,200	0	0	5,200	0				Yes					
"Other" General Aviation	County	FAIRVIEW	RICHLAND	FAIRVIEW	1,500	0	0	1,500	0									
"Other" General Aviation	County	FERNDALE	FLATHEAD	BIGFORK	2,600	0	0	2,600	0									
"Other" General Aviation	County	LINSDALE	VALLEY	LINSDALE	600	0	0	600	0									

Type of Airport	Type of Ownership	Airport Name	LOCATION		NUMBER OF OPERATIONS PER YEAR					AIRPORT SERVICES			INTERMODAL TRANSPORTATION SERVICES					
			County	City/Town	Total	Carrier	Commuter	Air Taxi & GA	Military	Fuel	Repairs		Car Rental	City	Inter City Bus	Limo	Taxi	Courtesy Car
											Major	Minor						
"Other" General Aviation	County	HOGELAND	GLAINS	HOGELAND	175	0	0	175	0									
"Other" General Aviation	County	HOT SPRINGS	SANDERS	HOT SPRINGS	450	0	0	450	0									
"Other" General Aviation	County	HYSHAM	TREASURE	HYSHAM	450	0	0	450	0									
"Other" General Aviation	County	JORDAN	GARFIELD	JORDAN	2,000	0	0	2,000	0									
"Other" General Aviation	County	LIBERTY COUNTY AIRPORT	LIBERTY	CHESTER	4,650	0	0	4,550	0	Yes	Yes							
"Other" General Aviation	County	MINERAL COUNTY AIRPORT	MINERAL	SUPERIOR	1,450	0	0	1,450	0									
"Other" General Aviation	County	PLAINS	SANDERS	PLAINS	2,200	0	0	2,200	0									
"Other" General Aviation	County	RICHEY	DAWSON	RICHEY	2,200	0	0	2,200	0									
"Other" General Aviation	County	ROUDUCK FIELD	GRANITE	PHILIPSBURG	2,200	0	0	2,200	0									
"Other" General Aviation	County	SEELEY LAKE	MISSOULA	SEELEY LAKE	1,650	0	0	1,650	0									
"Other" General Aviation	County	ST IGNATIUS	LAKE	ST IGNATIUS	2,250	0	0	2,250	0									
"Other" General Aviation	County	SUNDURST	TOOLE	SUNBURST	225	0	0	225	0									
"Other" General Aviation	County	TERRY	PRAIRIE	TERRY	600	0	0	600	0									
"Other" General Aviation	County	THOMPSON FALLS	SANDERS	THOMPSON FALLS	3,050	0	0	3,050	0	Yes								
"Other" General Aviation	County	TURNER	BLAINE	TURNER	3,350	0	0	3,350	0	Yes	Yes							
"Other" General Aviation	County	WHEATLAND COUNTY	WHEATLAND	HARLOWTON	3,037	0	0	3,012	25									
"Other" General Aviation	County	WISDOM	BEAVERHEAD	WISDOM	150	0	0	150	0									
"Other" General Aviation	County	WISE RIVER	BEAVERHEAD	WISE RIVER	400	0	0	400	0									
"Other" General Aviation	City-County	BAKER	FALLON	BAKER	6,700	0	0	6,700	0	Yes	Yes							Yes
"Other" General Aviation	City-County	BIG SANDY	CHOUTEAU	BIG SANDY	3,200	0	0	3,200	0	Yes		Yes						
"Other" General Aviation	City-County	BIG SKY FIELD	ROOSEVELT	CULBERTSON	4,436	0	0	4,350	50	Yes	Yes							
"Other" General Aviation	City-County	BIG TIMBER	SWEET GRASS	BIG TIMBER	6,600	0	0	6,600	0	Yes	Yes							
"Other" General Aviation	City-County	BOULDER	JEFFERSON	BOULDER	400	0	0	400	0									
"Other" General Aviation	City-County	BOWMAN	DEER LODGE	ANACONDA	6,000	0	0	6,000	0	Yes	Yes							
"Other" General Aviation	City-County	BRIDGER MUNICIPAL	CARBON	BRIDGER	1,000	0	0	1,000	0									
"Other" General Aviation	City-County	CIRCLE	McCONE	CIRCLE	2,120	0	0	2,120	0	Yes	Yes							
"Other" General Aviation	City-County	CUT BANK	GLACIER	CUT BANK	5,550	0	0	5,500	50	Yes	Yes		Yes					
"Other" General Aviation	City-County	DEER LODGE CITY-COUNTY	POWELL	DEER LODGE	3,210	0	0	3,010	200									
"Other" General Aviation	City-County	DUTTON	TETON	DUTTON	1,250	0	0	1,250	0									
"Other" General Aviation	City-County	FAIRFIELD	TETON	FAIRFIELD	3,200	0	0	3,200	0									
"Other" General Aviation	City-County	FORT BENTON	CHOUTEAU	FORT BENTON	3,250	0	0	3,250	0		Yes							
"Other" General Aviation	City-County	GERALDINE	CHOUTEAU	GERALDINE	3,650	0	0	3,650	0									
"Other" General Aviation	City-County	HARLEM	BLAINE	HARLEM	3,600	0	0	3,600	0									
"Other" General Aviation	City-County	MALTA	PHILLIPS	MALTA	2,750	0	0	2,550	20	Yes	Yes							Yes
"Other" General Aviation	City-County	MISSION FIELD	PARK	LIVINGSTON	2,720	0	0	2,700	20	Yes	Yes							Yes
"Other" General Aviation	City-County	OPHEIM	VALLEY	OPHEIM	450	0	0	450	0									
"Other" General Aviation	City-County	POLSON	LAKE	POLSON	7,000	0	0	7,000	0	Yes	Yes							
"Other" General Aviation	City-County	POPLAR	ROOSEVELT	POPLAR	5,750	0	0	5,700	50	Yes		Yes						
"Other" General Aviation	City-County	RED LODGE	CARBON	RED LODGE	7,750	0	0	7,700	50	Yes			Yes				Yes	
"Other" General Aviation	City-County	RONAN	LAKE	RONAN	2,300	0	0	2,300	0									
"Other" General Aviation	City-County	ROUNDUP	MUSSELSHELL	ROUNDUP	4,450	0	0	4,450	0	Yes		Yes						Yes
"Other" General Aviation	City-County	SCOBEY	DANIELS	SCOBEY	6,900	0	0	6,900	0	Yes	Yes							
"Other" General Aviation	City-County	SHELBY	TOOLE	SHELBY	5,000	0	0	4,950	50	Yes								
"Other" General Aviation	City-County	STANFORD	BASIN	STANFORD	4,000	0	0	4,000	0									
"Other" General Aviation	City-County	TOWNSEND	BROADWATER	TOWNSEND	4,800	0	0	3,100	1,700		Yes							
"Other" General Aviation	City-County	TWIN BRIDGES	MADISON	TWIN BRIDGES	2,050	0	0	2,050	0									
"Other" General Aviation	City-County	WHITE SULPHUR SPRINGS	MEAGHER	WHITE SULPHUR SP.	5,000	0	0	5,000	0	Yes	Yes							
"Other" General Aviation	City-County	WILSALL	PARK	WILSALL	500	0	0	500	0									
"Other" General Aviation	City-County	WINFRED	FERGUS	WINFRED	1,150	0	0	1,100	0									

Type of Airport	Type of Ownership	Airport Name	LOCATION		NUMBER OF OPERATIONS PER YEAR					AIRPORT SERVICES			INTERMODAL TRANSPORTATION SERVICES					
			County	City/Town	Total	Carrier	Commuter	Air Taxi & GA	Military	Fuel	Repairs		Car Rental	City	Inter City Bus	Limo	Taxi	Court'y Car
											Major	Minor						
"Other" General Aviation	Private	FLYING Y	PARK	LIVINGSTON	n/a	n/a	n/a	n/a	n/a				Yes					
"Other" General Aviation	Private	HERBERMAN AIRPORT	BLAINE	CHINOOK	535	0	0	525	0		Yes							Yes
"Other" General Aviation	Private	ST. LABRE MISSION	ROSEBUD	ASHLAND	500	0	0	500	0									
"Other" General Aviation	Private	LINDEYS LANDING WEST	MISSOULA	SELLEY LAKE	140	0	0	140	0	Yes								Yes
"Other" General Aviation	Private	SAND SPRINGS	GARFIELD	SAND SPRINGS	1,522	0	0	1,522	0	Yes								Yes
"Other" General Aviation	Private	SPORTSMANS FIELD	MADISON	ENNIS	4,200	0	0	2,800	0	Yes								
"Other" General Aviation	Private	SUNDAY CREEK AIRPARK	CUSTER	MILES CITY	n/a	n/a	n/a	n/a	n/a	Yes	Yes							
"Other" General Aviation	State of Montana	CANYON FERRY	BROADWATER		1,100	0	0	700	400									
"Other" General Aviation	State of Montana	DELL FLIGHT STRIP	BEAVERHEAD	DELL	800	0	0	800	0									
"Other" General Aviation	State of Montana	ELMOTT FIELD	MISSOULA	ROCK CREEK	425	0	0	425	0									
"Other" General Aviation	State of Montana	LAVINA	GOLDEN VALLEY	LAVINA	2,250	0	0	225	0									
"Other" General Aviation	State of Montana	LINCOLN	LEWIS & CLARK	LINCOLN	3,225	0	0	3,150	75									
"Other" General Aviation	State of Montana	ROSS INTERNATIONAL	TOOLE	SWEET GRASS	15	0	0	15	0									
"Other" General Aviation	State of Montana	RYEGATE	GOLDEN VALLEY	RYEGATE	225	0	0	225	0									
"Other" General Aviation	State of Montana	STARR-BROWNING	GLACIER	BROWNING	500	0	0	500	0									
"Other" General Aviation	State of Montana	TIBER DAM	LIBERTY	TIBER DAM	50	0	0	50	0									
"Other" General Aviation	State of Montana	WHITSTONE INTERNAT'L	GLACIER	DEL MONTA	62	0	0	62	0									
"Other" General Aviation	U.S. BIA	FORT BELKNAP	BLAINE	FORT BELKNAP	175	0	0	175	0									
"Other" General Aviation	U.S. Forest Serv	BENCHMARK	LEWIS & CLARK	BENCHMARK	380	0	0	380	0									
"Other" General Aviation	U.S. Forest Serv	CONDON	MISSOULA	BITTERROOT CREEK	500	0	0	500	0									
"Other" General Aviation	U.S. Forest Serv	SANDERSON-GLACIER NAT	FLATHEAD	POLEBRIDGE	n/a	n/a	n/a	n/a	n/a									
"Other" General Aviation	U.S. Forest Serv	SPOTTED BEAR	FLATHEAD	SPOTTED BEAR	700	0	0	450	250									
"Other" General Aviation	U.S. Forest Serv	MEADOW CREEK	FLATHEAD	MEADOW CREEK	225	0	0	225	0									
"Other" General Aviation	U.S. Forest Serv	SCHAFER	FLATHEAD	SCHAFER	550	0	0	550	0									
"Other" General Aviation	U.S. Forest Serv	TROY	LINCOLN	TROY	700	0	0	700	0									
"Other" General Aviation	U.S. Park Service	FORT SMITH	BIG HORN	FORT SMITH	2,100	0	0	2,700	0									
"Other" General Aviation	U.S./Canadian	EAST POPLAR	DANIELS	EAST POPLAR	10	0	0	10	0									
"Other" General Aviation	Canadian Govt	WEST POPLAR		WEST POPLAR	n/a	n/a	n/a	n/a	n/a									
"Other" General Aviation	Blackfeet Indian	BABB	GLACIER	BABB	360	0	0	360	0									

NOTE: Operations data are for 1993 and/or 1994

Sources: Montana Aeronautics Division, *Montana Air Directory* (MDOT, 1994); TIMCHER Airport Manager's Survey, 1995; FAA NPIP Reports

Appendix 3

FAA Approximate Benefits for Various Airport Activity Levels

Approximate Benefits for Various Airport Activity Levels

Based Aircraft	Annual Commercial Passengers[1]	Reduction in Distance to Airport[2]	Value of Time Saved	Reduction in Travel Cost	Total Annual Benefits
10	0	20	$99,900	$23,400	$123,300
20	0	20	$199,800	$46,800	$246,600
50	0	20	$499,500	$117,000	$616,500
100	0	20	$999,000	$234,000	$1,233,000
50	50,000	20	$1,165,500	$507,000	$1,672,500
100	100,000	20	$2,331,100	$1,014,000	$3,345,100
100	1,000,000	20	$14,319,000	$8,034,000	$22,353,000

[1] Includes only origin and destination traffic; does not include through or transfer passengers

[2] Highway mileage measured from the point where trips begin or end, typically the traveler's residence or place of business

Source: Butler and Kiernan, 1992, page 10.

REFERENCES

Butler, Stewart E. and Kiernan, Lawrence, *Estimating the Regional Economic Significance of Airports* (DOT/FAA/PP-92-6, September, 1992).

Graham, Paul, *Selected Airport Operations and Enplanements Data* (Montana Airport Manager's Association, 1995).

Huerta, M.P., *Intermodal Technical Assistance for Transportation Planners and Policy Makers* (U.S. Department of Transportation, 1994).

Landum & Brown, Origin-Destination Survey of Airline Traffic - Domestic. *Comparative Airport Statistics for Missoula, Billings, Bozeman and Kalispell* (1992).

Montana Aeronautics Division, *Montana Airport Directory* (Montana Department of Transportation, 1994).

Sabre Computer Reservation System, (American Airlines, 1995).

University of Montana, Bureau of Business and Economic Research, Household Survey, *Montana Airport Multimodal Study, Part I, Methods and Results* (State of Montana, Department of Transportation, 1995).

University of Montana, Bureau of Business and Economic Research, Airport Managers Survey, *Montana Airport Multimodal Study, Part I, Methods and Results* (State of Montana, Department of Transportation, 1995).