

*Northern Cheyenne
Reservation*

Technical Assistance

Executive Summary



Prepared for

**Northern Cheyenne
Reservation**



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Executive Summary

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INTRODUCTION

The Community Transportation Association of America (CTAA), on behalf of the Northern Cheyenne Tribe, contracted with LSC Transportation Consultants, Inc. (LSC) to provide Technical Assistance in preparing a public transportation plan. The project focuses on the transit needs of the Northern Cheyenne Tribe for the general public, elderly, disabled, and Tribal members; and how to effectively provide transit services to meet those needs. Currently, there is limited general public transportation service provided by the several tribal programs, but no comprehensive transit system. The Tribal Employment Rights Office (TERO) and several other agencies have recognized the need for improving public transportation on the Northern Cheyenne Reservation.

There are existing resources in the area used by human service agencies to provide transportation services for their clients. The existing resources represent a significant investment and may provide some of the resources necessary to implement a public transit service. Coordination and consolidation of services typically allow local entities to provide additional and enhanced services to the community using the existing resources. A key issue in the Technical Assistance project was to identify the existing available resources and any additional resources which may be needed to provide public transit service.

STUDY AREA

The Northern Cheyenne Reservation is located in portions of Big Horn and Rosebud Counties in the southeast area of Montana, approximately 100 miles east of Billings. The Reservation covers a total land area of approximately 451,200 acres and includes the cities and towns of Lame Deer, Busby, Muddy (historical), Birney (Day School), and Ashland. The surrounding towns and cities are Forsyth and Colstrip to the north, and Hardin and Billings to the west. These surrounding towns and cities have an appeal to the residents of the Reservation for various services including employment, grocery shopping, and medical purposes.

The Northern Cheyenne Reservation has an approximate population of 4,471 people. Ninety-two percent of the residents are Native Americans. The overall population density is approximately six people per square mile.

TRANSIT NEEDS ASSESSMENT

Chapter V of the Final Report provides a transportation needs assessment for the Northern Cheyenne Tribe. The transportation needs for the Tribe are significant, especially based on the unemployment data, below-poverty data, sparse rural geographic area, and limited job opportunities in the study area.

In order to estimate the transportation needs for the Northern Cheyenne Tribe, it is important to have a methodology that considers the local demographics, economics, and service characteristics. Chapter V describes the development of a transit demand model for the study area that can be used to estimate the transit demand. The transit demand estimates were based upon the available year 2000 US Census data, as presented in Chapter II of the Final Report. These data were used as the baseline 2005 transit demand estimates and 2010 projected transit demand estimates.

The most recent research for rural transit demand estimation was completed in 1996 as part of the Transit Cooperative Research Program (TCRP) Project A-3: Rural Transit Demand Estimation Techniques. This study, completed by SG Associates, Inc. and LSC, represented the first substantial research into the demand for transit service in rural areas and small communities since the early 1980s. The study presents a series of formulas relating the number of participants in various types of programs to the observed actual demand for transit service, based upon a database of 185 transit agencies across the country. The TCRP analytical technique uses a logit model approach to estimate transit demand, similar to that commonly used in urban transportation models. The model incorporates an exponential equation which relates the quantity of service and the demographics of the area.

The TCRP analysis procedure considers transit demand in two major categories: “*program demand*” which is generated by transit ridership to and from specific social service programs; and “*non-program demand*” generated by the other mobility needs of the elderly, disabled, and general public (including youth). Examples of non-program trips may include shopping, employment, and medical trips.

As presented in Chapter V of the Final Report, the model indicates that, if a high level of public transit were available on the Northern Cheyenne Reservation, approximately 13,590 annual trips (non-program trips) would be provided. Currently, less than 6,000 overall (program and non-program trips) annual trips are provided. Therefore, the model shows the need for additional public transit services on the Reservation.

When combining the program and non-program estimates, based upon the TCRP methodology, the total existing transit demand for the Northern Cheyenne Reservation is approximately 79,272 annual trips.

$$13,590 \text{ non-program trips} + 65,682 \text{ program trips} =$$

79,272 TOTAL Annual Transit Demand

Assuming approximately 6,000 annual trips were provided, only eight percent of the transit need are being met on Northern Cheyenne Reservation. This number includes the annual trips from mental health agencies, Youth Assessment Center, Head Start, and local group homes. Since a significant number of trips are not being met for the Northern Cheyenne Tribe, there is a large need for improved transit services in order to meet the community’s needs.

RECOMMENDED TRANSIT SERVICE PLAN

Chapter XI of the Final Report presents the details of the preferred transit service alternative including the levels of service, route schedules, operational costs, capital needs, and capital costs. The preferred transit service alternative would be developed in three phases, each of which contains three transit service elements at increasing levels of service. Phase I has 34 daily revenue-hours. Phase II has 41

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daily revenue-hours. Phase III has 45 daily revenue-hours. The three phases were created in order to facilitate the coordination of the different transit providers on the Northern Cheyenne Reservation to support one overall transit provider, with a new Tribal Transit Department (TTD) that would operate the preferred transit service alternative.

The preferred transit service alternative is based on various transit service elements. The phases would include two demand-response zones, each operating four revenue-hours per day for a total of eight revenue-hours per day. Limited regional service to Billings would operate four hours per day every other Saturday of the month. Service would also be provided to the Cheyenne-Crow Hospital in the morning and afternoon three times per week. Demand-response service would be provided during off-peak times and, in later phases, in the evening hours. The last element is the casino bus service which operates daily in the morning and afternoon. Tables ES-1 through ES-3 detail the levels of service for all phases of the preferred transit service plan over the next five to six years. Figure ES-1 presents the preferred transit service detailed in the above text and tables.

**Table ES-1
Phase I (2007-2009)**

		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Busby - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Lame Deer - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Hospital Run	AM / PM	1	82	4	12,792	624	156	1,248	2.0	\$17,398	\$14
Billings Shopper Run	Bi-monthly		204	4	5,304	106	26	212	2.0	\$4,347	\$20
Demand Response 2 Zones	Lame Deer		160	8	40,800	2,040	255	3,060	1.5	\$56,426	\$18
Casino Run	AM / PM	1	360	6	91,800	1,530	255	3,060	2.0	\$69,493	\$23
Total/Avg		4	1,226	34	257,796	7,360		16,760	2.3	\$252,684	\$15

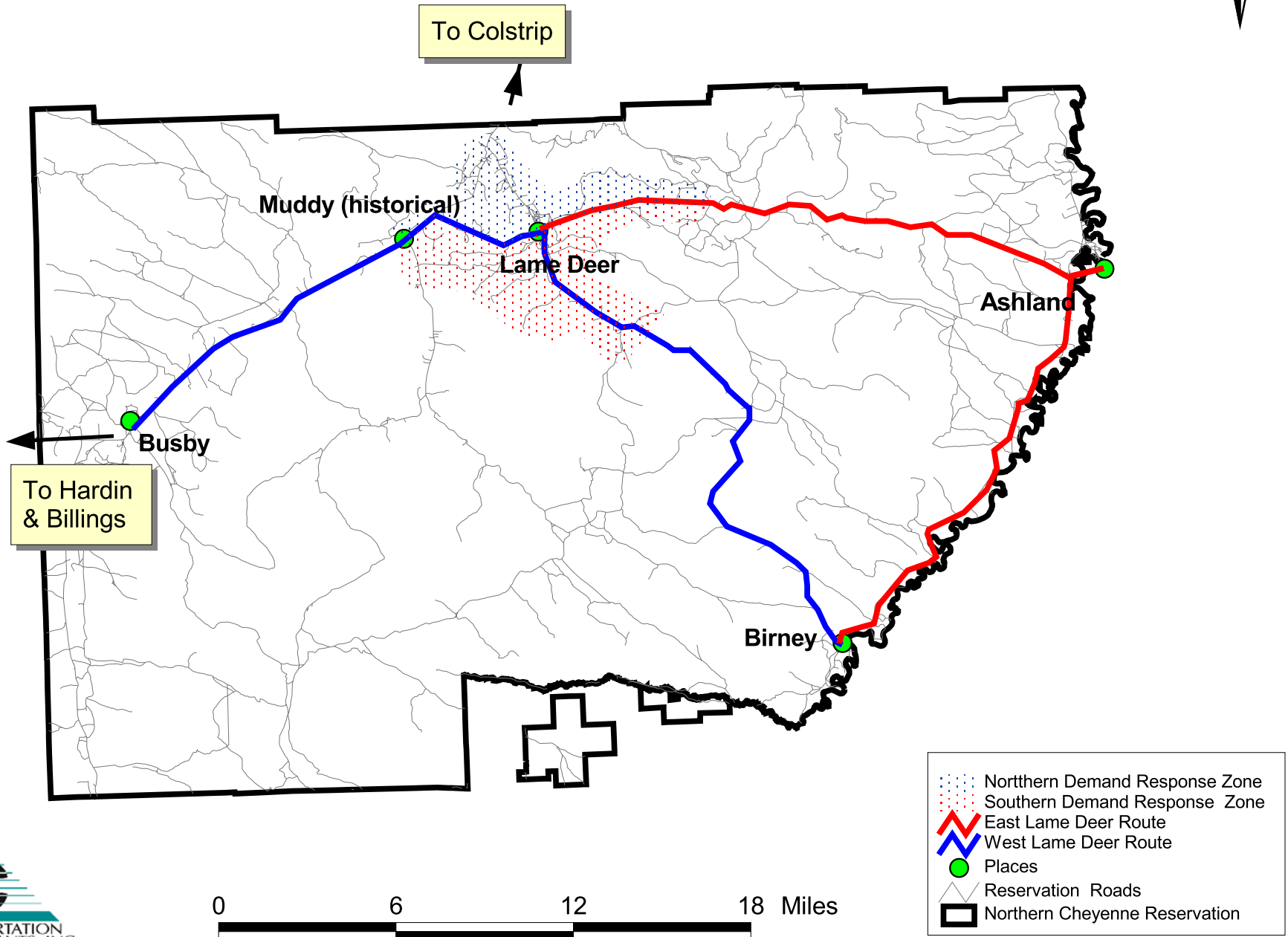
**Table ES-2
Phase II (2010-2012)**

		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Busby - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Lame Deer - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Hospital Run	AM /PM	1	82	4	12,792	624	156	1,248	2.0	\$17,398	\$14
Billings Shopper Run	Bi-monthly		204	4	5,304	106	26	212	2.0	\$4,347	\$20
Demand Response 2 Zones	Lame Deer		160	8	40,800	2,040	255	3,060	1.5	\$56,426	\$18
Demand Response Evening	6:00p to 10:00 p		160	8	40,800	2,040	255	3,060	1.5	\$56,426	\$18
Casino Run	AM / PM	1	360	6	91,800	1,530	255	3,060	2.0	\$69,493	\$23
Total/Avg		4	1,386	42	298,596	9,400		19,820	2.1	\$309,110	\$16

**Table ES-3
Phase III (2012-2015)**

		# of Veh.	Total Daily		Total Annual		Operating Days	Annual Ridership	Pass. per Hour	Operating Cost Annual	Cost (\$) per Pass.
			Vehicle-Miles	Vehicle-Hours	Vehicle-Miles	Vehicle-Hours					
Busby - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Lame Deer - Birney Route	AM /Noon/ PM	1	210	6	53,550	1,530	255	4,590	3.0	\$52,510	\$11
Hospital Run	AM /PM	1	82	4	12,792	624	156	1,248	2.0	\$17,398	\$14
Billings Shopper Run	Weekly		204	4	10,608	212	52	424	2.0	\$8,694	\$20
Demand Response 2 Zones	Lame Deer		160	8	40,800	2,040	255	3,060	1.5	\$56,426	\$18
Demand Response Evening	6:00p to 10:00 p		160	8	40,800	2,040	255	3,060	1.5	\$56,426	\$18
Casino Run	AM /Noon/ PM	1	600	9	153,000	2,295	255	4,590	2.0	\$111,032	\$24
Total/Avg		4	1,626	45	365,100	10,271		21,562	2.1	\$354,997	\$16

Figure ES-1
Preferred System



FINANCIAL PLAN

From the information presented in Tables ES-1 through ES-3, LSC has developed a financial plan for the implementation of the preferred transit service alternative. LSC recommends that the Northern Cheyenne Tribe apply for funding, such as TANF and TransADE, in order to support public transportation services on the Northern Cheyenne Reservation. Any funding that the Tribe receives should be used as the local match for Phases I through III. Federal funding, including Federal Transit Administration (FTA) funding, is expected to remain relatively stable over the next few years. The Tribe should continue to work toward establishing new revenue sources. Additional funds may be generated by pursuing grants from agencies and foundations other than the Montana Department of Transportation or FTA.

Federal funding is available for 54 percent of the operating costs for general public transportation services. The remaining operating deficit would need to be funded by the Northern Cheyenne Tribe. The Tribal programs and agencies in the region could each contribute to the annual funding of the transit service. This could be done by developing intergovernmental agreements between the TTD, Tribal programs, and other local agencies. The TTD could also develop an agreement with Dull Knife College for a portion of the student fees, which could be used to fund transit services. The breakdown of the Tribal and federal funding is detailed in Table ES-4.

Table ES-4 Transit Plan, 2007-2012 (assumed 3% inflation)							
	2007	2008	2009	2010	2011	2012	Total
EXPENSES							
OPERATING							
Phase I	\$252,700	\$260,281	\$268,089	\$276,132	\$284,416	\$292,949	\$1,634,567
Phase II (Evening Demand Response)	\$0	\$0	\$0	\$63,508	\$65,413	\$67,376	\$196,297
Phase III (Billing Weekly and Additional Service Hrs)	\$0	\$0	\$0	\$0	\$0	\$54,790	\$54,790
RideShare Program	\$9,000	\$9,270	\$9,548	\$9,835	\$10,130	\$10,433	\$0
Marketing Program	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$24,000
Subtotal	\$265,700	\$273,551	\$281,638	\$353,475	\$363,959	\$429,548	\$1,909,654
CAPITAL							
Minivans	\$90,000	\$0	\$0	\$0	\$0	\$107,465	\$197,465
Transit Buses	\$210,000	\$0	\$0	\$0	\$0	\$167,167	\$377,167
Bus Bike Racks (4)	\$1,500	\$1,545	\$1,591	\$1,639	\$0	\$0	\$6,275
Transit Stop Improvements (5 stops over 5 years)	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$0	\$53,091
Transit Maintenance Building and Office	\$150,000	\$150,000	\$0	\$0	\$0	\$0	\$300,000
Office / Administration / Maintenance Equipment	\$5,000	\$55,000	\$5,000	\$5,000	\$5,000	\$5,000	\$80,000
Subtotal	\$466,500	\$216,845	\$17,200	\$17,566	\$16,255	\$279,632	\$1,013,999
TOTAL EXPENSES	\$732,200	\$490,396	\$298,838	\$371,041	\$380,214	\$709,180	\$2,923,653
REVENUES							
FTA 5311 Program (operating)	\$140,238	\$144,478	\$148,844	\$187,636	\$193,298	\$228,716	\$1,043,210
FTA Tribal	\$0	\$15,000	\$15,450	\$15,914	\$16,391	\$16,883	\$79,637
State Grant/ MDT (TransADE)	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$180,000
Subtotal	\$170,238	\$189,478	\$194,294	\$233,550	\$239,689	\$275,599	\$1,302,847
FTA 5310 Program (capital)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FTA 5311 Program (capital)	\$373,200	\$173,476	\$13,760	\$14,053	\$13,004	\$223,706	\$811,199
State	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$373,200	\$173,476	\$13,760	\$14,053	\$13,004	\$223,706	\$811,199
Local Revenues							
Local Match (capital)	\$93,300	\$43,369	\$3,440	\$3,513	\$3,251	\$55,926	\$202,800
Local Match (operating) / TANF and Tribal Programs	\$54,716	\$42,285	\$44,481	\$75,956	\$79,163	\$81,660	\$378,260
Local Match Contract	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Casino Local Match (operating)	\$34,747	\$35,789	\$36,863	\$37,968	\$39,107	\$66,289	\$250,763
Advertising	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fares	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$36,000
Subtotal	\$188,762	\$127,442	\$90,783	\$123,438	\$127,521	\$209,876	\$867,823
TOTAL REVENUES	\$732,200	\$490,396	\$298,838	\$371,041	\$380,214	\$709,180	\$2,981,869
Source: LSC, 2006.							

IMPLEMENTATION PLAN

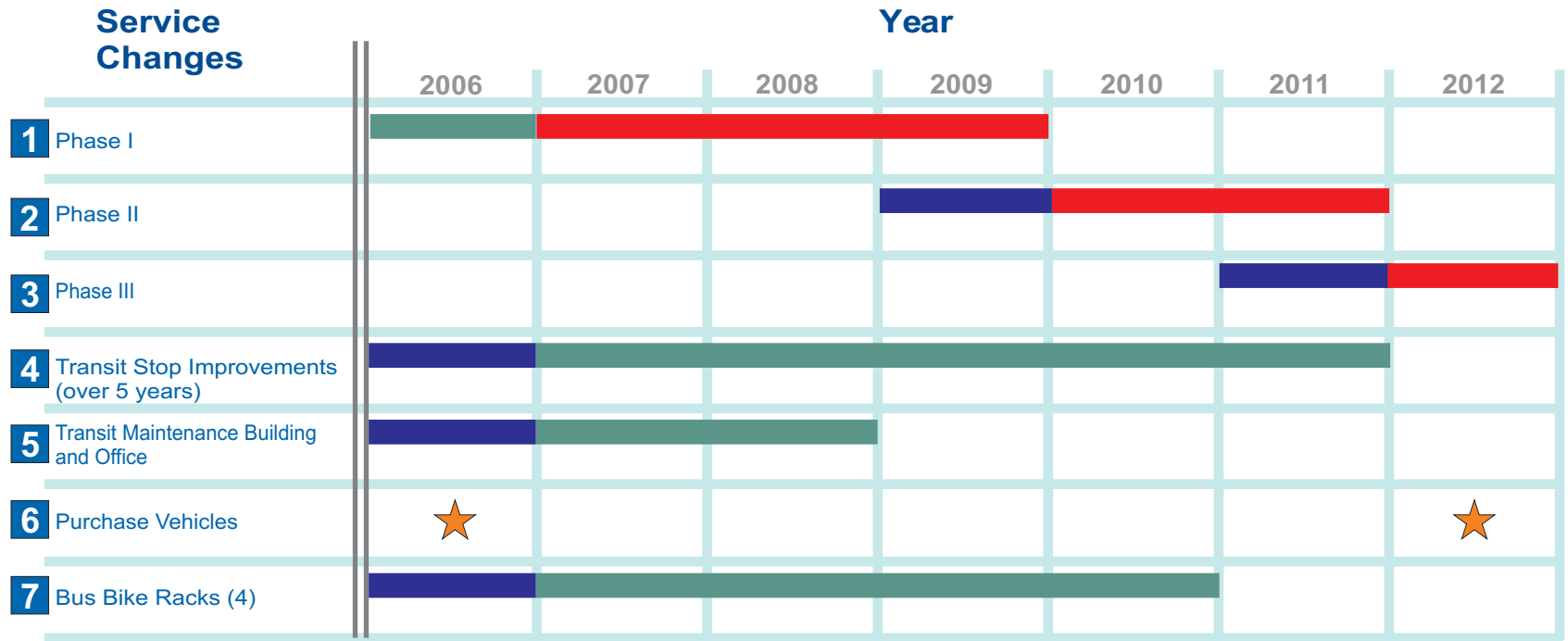
In the implementation plan, LSC recommends the planning and implementation of the preferred transit service alternative. Chapter XII of the Final Report lists the activities that need to be completed in order to implement the preferred transit service alternative, which would be developed in three phases. Phase I (years 2007 through 2009) has an estimated annual operational cost of \$265,700 with inflation. Phase I costs include checkpoint, demand-response, limited regional, hospital, and casino services. Phase II (years 2010 through 2012) increases the estimated annual operational cost to \$353,500 with inflation. Phase II costs include improved checkpoint service and expanded demand-response service. Phase III (years 2012 through 2015) increases the estimated annual operational cost to \$429,600 with inflation. Phase III costs include the increased expense of the regional and casino service.

LSC recommends the development and installation of five bus stops over the next five years. The bus stops should be located in Lame Deer, Busby, Muddy, Ashland, and Birney.

Depending on the FTA and Montana Department of Transportation funding, the transit maintenance and administration facility should be planned and designed in 2006. Construction of the maintenance and administration facility should begin in 2007, with completion by the end of 2008. Until then, the vehicles could operate out of the TERO office and Head Start Program.

The implementation timeline is designed to implement the preferred transit service alternative over the next five to six years. This timeframe allows those agencies and government bodies which are dedicating funding to the transit system the time to shift funding. The time frame, as presented in Figure ES-2, allows for the refinement of the transit services in Phase I, the development of the bus stops, and transit facilities that would be needed by Phases II and III. LSC's recommended timeline for implementation of the three phases of the preferred transit service alternative is presented in Figure ES-2.

Figure ES-2 Short-Term Plan Timeline



LEGEND

- Planning Phase / Intergovernmental Agreements
- Implementation/Construction Year
- Operations
- Feedback
- Purchase Vehicles

