University of New Mexico
Central New Mexico Community College

TRAVEL DEMAND MANAGEMENT STUDY

Phase I Findings: Travel Characteristics and Opportunities

Mid-Region Council of Governments
March 16, 2011

with

Table of Contents

Introduction

The University of New Mexico and the Central New Mexico Community College are two of New Mexico's premiere institutions of secondary education. Located near the geographic center of the City of Albuquerque, approximately 60,000 students were enrolled at these institutions in 2010. Combined with the University of New Mexico Hospital and Health Sciences Center, these institutions attract approximately 74,000 persons per day and make the area the City's largest activity center.

Convenient and affordable access to the education, health care, and employment opportunities offered by UNM / CNM are essential for these institutions to achieve their missions. At the same time, the transportation connections providing this access have significant impacts on the surrounding residential and commercial uses as well as distant transportation infrastructure. As the institutions grow and the city's residential areas continue to move outward, a comprehensive strategic examination of the current and future travel needs of the institutions is warranted.

This goal of this research is to develop the framework for a travel demand management (TDM) program for UNM and CNM. As opposed to piecemeal efforts to address a single facet of travel – such as parking or congestion – a TDM program is a coordinated set of activities. TDM activities can include promoting alternative modes of transportation, increasing vehicle occupancy through ridesharing programs, and shifting trips from peak-hour congested corridors to off-peak periods. The final TDM program should consider not only effectiveness but costs, timeline, potential outcomes, and lead agency.

This report summarizes the first phase of an effort to identify opportunities to promote efficient access to the institutions while minimizing the impacts of vehicular travel in the surrounding area. First, the report describes the travel associated with the institutions – who, when and how people are traveling to and from the institutions. This report goes on to outline opportunities to improve travel to and from the institutions and makes some recommendations on activities to be pursued.

The study is being undertaken by UNM, CNM, the City of Albuquerque, Bernalillo County, and the Mid-Region Council of Governments.

Research Activities

The following research activities were conducted in the first phase of research:

- Analysis of data provided by UNM and CNM on the home location of employees and students, parking permit registrations, shuttle ridership, building utilization, planned development, and a variety of other topics was a key research activity. MRCOG used these data in its travel model and TRAM (Transportation Accessibility Model) to quantify travel demand and travel impacts.
- Data from a survey conducted by UNM in March 2010 were used to describe the travel behavior of UNM students, faculty, and staff. MRCOG's analysis of these data describes many of the mode choice characteristics of the UNM population.
- Two sets of public meetings were held to introduce the study, inform the public of research activities, and to solicit comments on the research scope and findings. These meetings were held both on UNM campus and in the surrounding neighborhood with special effort being made to solicit comments from people who live close to the institutions.
- Research of peer institutions – colleges and universities of similar sizes and geographic settings – regarding parking policies, travel mode options, and transportation demand management activities, etc. helped guide research activities.
- Interviews with key representatives of the City, UNM, CNM, Bernalillo County and other involved agencies helped define existing and projected conditions and clarified policies and objectives.

Critical to the development of these findings and recommendations was the input, guidance and direction from a high level coordinating committee. This committee not only supported research activities but served as a sounding board for findings.

Key Findings

A primary objective of the first phase of research was to describe the travel related to UNM, UNM Hospital (UNMH), UNM Health Sciences Center (UNMHSC), and CNM (collectively referred to as the "institutions"). These findings include:

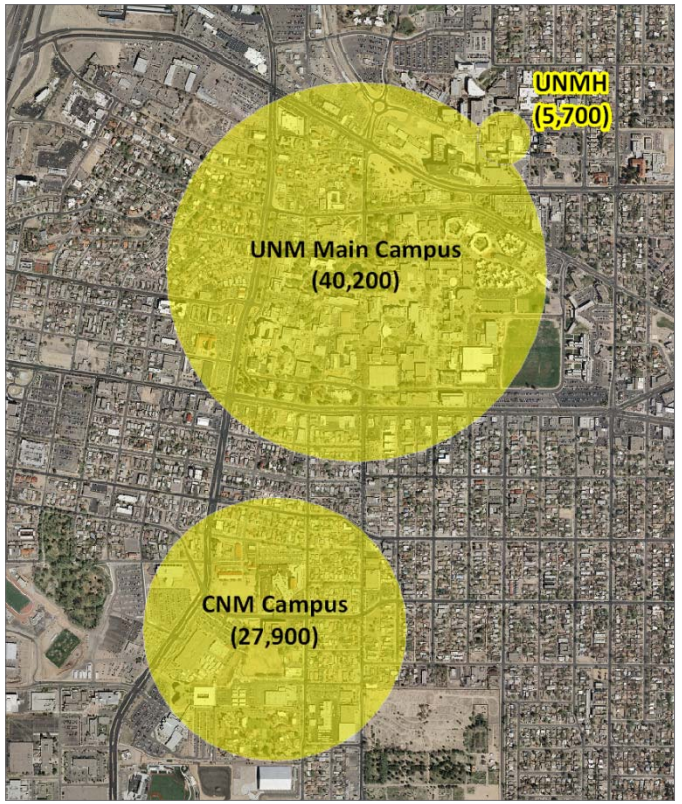
a. Land Use and Transportation

- Due to the sheer number of trips generated and central location (near the Albuquerque International Sunport, Downtown Albuquerque, and Nob Hill), the UNM / CNM area is a unique section of the City. These conditions present valuable land use and transportation opportunities though have also resulted in tensions between surrounding neighborhoods, the institutions, and the City due to traffic and other externalities.
- The UNM / CNM area is home to a unique mix of land uses, including a range of different housing options and price points, pedestrian and auto-oriented retail, commercial uses, and a variety of recreational / entertainment uses (some related to the institutions and other not). Recent City activities, such as the South Yale Sector Development Plan (adopted 2009), the Nob Hill Highland Sector Development Plan (2005), and the currently underway Lead & Coal Improvement Project, are designed to support and advance the area's strenghts.

b. Travel Demand

- The institutions had a population (faculty, staff and students) of approximately 74,000 in 2010 (Map 1). While all of this population does not travel to the area every day, the UNM / CNM area is by far the City's largest activity center. Faculty, staff and students (including full-time and part-time) share many travel characteristics, though each of these sub-groups has different travel opportunities, limitations, and needs.
- A conservative calculation of automobile demand associated with the institutions identifies 1.3 million vehicle miles traveled per day. This accounts for 5.3% of all the vehicle miles traveled in the region.
- In addition to the student, faculty and staff related travel, the UNM Hospital also

Map 1 — UNM/CNM Daytime Populations



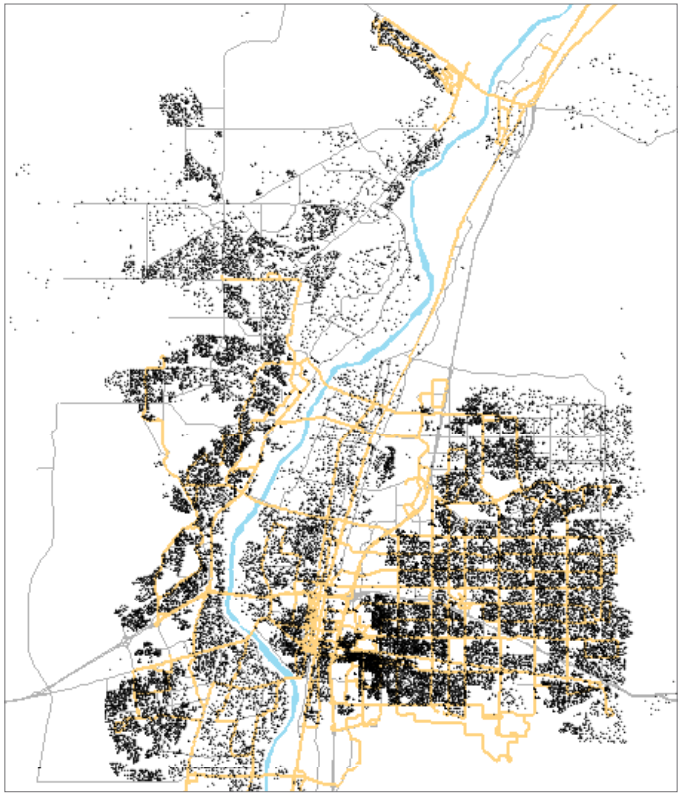
attracts approximately 1,000,000 trips a year. While it appears that this would break down to a relatively small number on a per day basis (3,000 – 4,000 depending on whether this is 5 or 7 day a week activity) more information regarding these trips is necessary to assess their impact and the ability of a TDM program to address them.

- UNM and CNM have similar parking needs in term of time and location of demand. This presents the opportunity for collaborative and cooperative efforts that may be effective in addressing the area's travel needs.
- The institutions attract persons from across the urban area, Santa Fe, central New Mexico (Map 2). While concentrations of population live in neighborhoods near the institutions, a large portion travels from 6 or more miles away and almost ¼ travels from more than 10 miles away.
- Building utilization data and anecdotal information on parking lot usage show that travel to the institutions peaks weekdays between 7:30 and 9:00 a.m. (the traditional a.m. peak) and between 2:30 and 4:00 p.m. (slightly before traditional peak). For CNM, the overall number of students on CNM campus on a given day is significantly lower than UNM (roughly 25%) though the usage pattern is similar to that of UNM. One exception is that CNM has very limited schedules on Fridays. While survey data indicate that many UNM students leave and return to campus a couple of times a day, the general impression is that CNM students are more likely to travel to campus only once a day.

c. Existing Transportation Options

Roadways: The institutions are located in the developed urban core of the City of Albuquerque. Roadway access to the institutions is primarily through a limited number of access points from I-25 and I-40 and through principal arterials for access from the south and west. Many of the streets in the area are already congested and the MRCOG traffic model shows streets in the area to be approaching or over capacity by 2015.

Map 2 — Location of UNM and CNM Faculty, Staff, and Student Homes



Parking: Much of the parking provided by the institutions is located along a two mile stretch of University Blvd extending from Odelia to Cesar Chavez (Map 3). The institutions' parking policies vary with CNM providing 2,500 close proximity free parking spaces and UNM having only fee parking (both permit and meter). Much of the UNM parking is accessed by shuttles while all CNM parking is walk up. Base price for a permit is similar for both institutions ($124 annually for UNM and $43 per term at CNM), though premium permits at UNM range to $1,600 annually.

Bus Routes: The UNM / CNM area is one of the areas of the city better served by ABQRide – largely due to the premium and high frequency service along Central Ave – though bus service to CNM is in need of improvement. While a number of bus stops are at the doorstep of UNM the Central Avenue bus routes are approximately ½ mile from CNM destinations. While some of the CNM population does walk between Central Ave and the CNM campus, this distance is beyond the commonly accepted range for pedestrian connection and bus connections are few and inconvenient.

Overall, including commuter routes which operate only at peak hours, a total of 11 routes serve UNM (Table 1). This service includes service to three sides of the campus, premium service (ABQRide's Red, Blue, and Green Lines), short headways, and long hours of service. In comparison, only four routes serve CNM. This service is characterized by long headways, short hours of service, and limited geographic coverage.

Direct and rapid transit connections are the most successful at attracting riders. The limited direct routes to CNM greatly reduce transit's ability to be a primary mode of transportation to the institution. The small portion (8%) of students, faculty and staff with access to direct bus routes to CNM highlights this poor service (Table 2).

Map 3 — UNM/CNM Parking Areas

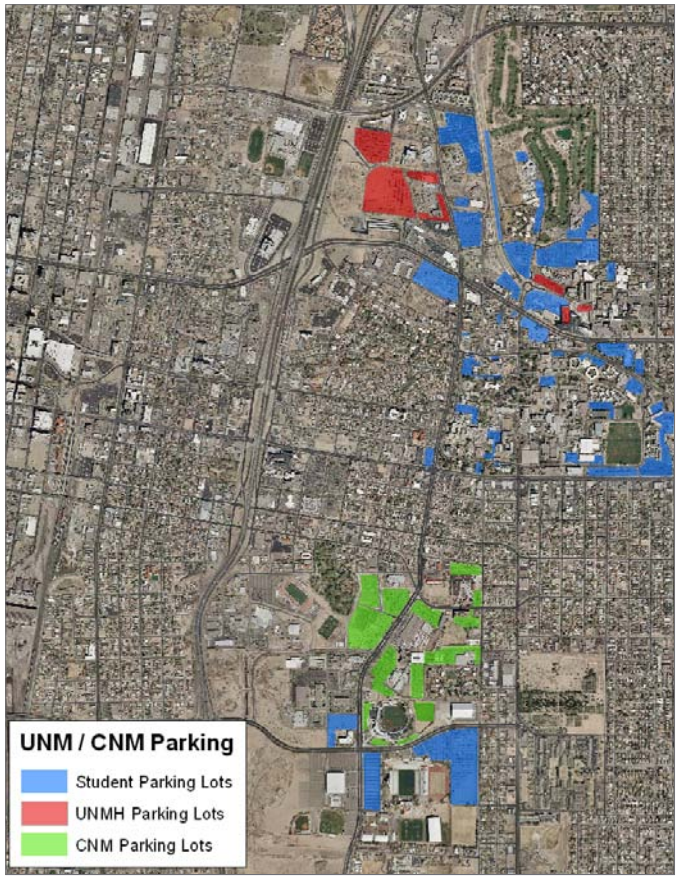


Table 1 — Existing ABQRide Routes Serving CNM and UNM Campuses

UNM Routes

Route	Street	Peak Headway	Midday Headway	Span of Service Start	Span of Service End
5	Lomas/Montgomery	20	25	605a	935p
11	Lomas	20	20	619a	901p
16/18	CBD/Gibson Circulator	45	45	619a	539p
50	MLK/Yale	30	30	647a	813p
66	Central	15	15	600a	1025p
766	Central/Uptown	15	15	540a	900p
777	Central/Tramway	15	15	550a	910p
790	Coors/Lomas	7-15*	20	615a	949p

** varies*

CNM Routes

Route	Street	Peak Headway	Midday Headway	Span of Service Start	Span of Service End
16/18	CBD/Gibson Circulator	45	45	619a	539p
50	MLK/Yale	30	30	647a	813p
97	Lead/Coal/Zuni	60	60	614a	644p

Shaded routes have headways in excess of 30 minutes

Source: MRCOG

Table 2 — Percentages of Travel Market with ABQride Bus Connection to Destination

	UNM				
Route Type	UNMH	Faculty and Staff	Students	CNM*	Total
Direct route	11%	24%	23%	8%	16%
Connecting	38%	46%	40%	47%	44%

- includes peak hour only commuter routes.
- not constrained by travel time.

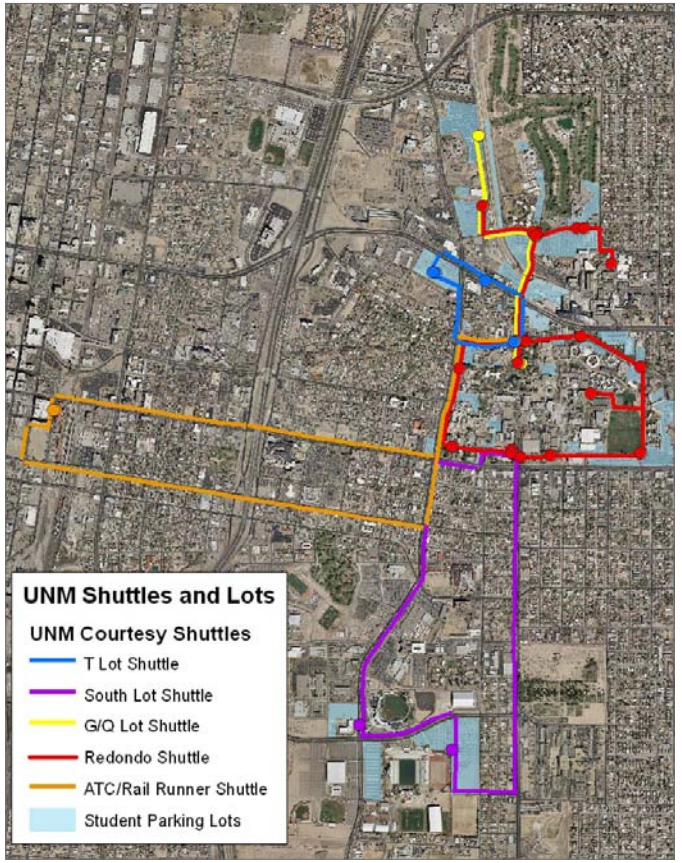
* includes 16/18 transfer

Source: MRCOG, 2011.

Parking Shuttles: UNM operates a fleet of shuttle buses that carry passengers between remote parking lots and a variety of destinations on campus. The shuttles primarily travel north and south along Yale and University Boulevards. The South Lot shuttle crosses Central Ave – a key ABQRide corridor – and continues past CNM to the south parking lots with no intermediate stops (Map 4). Additionally, the Redondo shuttle circulates around main campus and north to the law school and Health Sciences Center. UNM also provides shuttle to four New Mexico Rail Runner trains (two inbound and two outbound) for UNM riders free of charge. In total, UNM shuttles operate on very short headways in peak periods and carry 8–10,000 riders a day – or 1.7 to 2 million riders annually – making it one of the state's highest ridership transit systems.

CNM offers no shuttles.

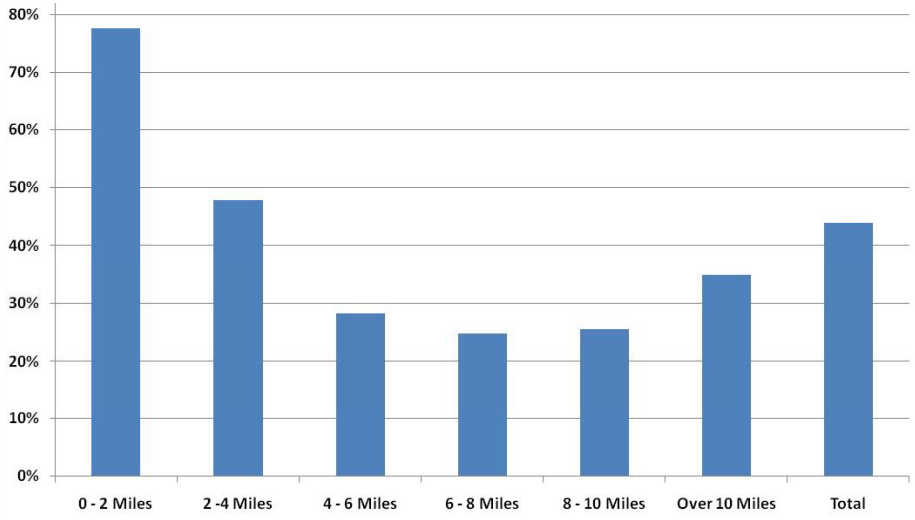
Map 4 — UNM Shuttle Routes



d. Mode Choice

- Survey data on UNM (including UNMH and UNMHSC) show that 45% – an extremely high portion – of students, faculty and staff report using an alternative mode (meaning that they do not drive alone) to get to campus. Students are more likely than faculty and staff to use alternative modes of transportation.
- Those traveling two miles or less report they are very likely to use an alternative mode of transportation to travel to and from UNM, with the rates generally declining with distance. For those choosing alternative modes, the mode choice is strongly related to the distance being traveled (Figure 1).

Figure 1 — Percent of UNM Faculty, Staff and Students Using Alternative Modes to Travel to UNM by Distance



Source: UNM Commuter Survey, Danielle Gilliam, 2010. Analysis by MRCOG.

e. Alternative Modes

The distribution of alternative mode choice is shown in Figure 2. Of all the UNM population who use alternative transportation, 33% use ABQRide to get to and from campus. Alternative mode shares decrease to 9% for "other" modes (which includes the Rail Runner, getting dropped off by a family member, and walking to a remote parking lot and taking the UNM shuttle, etc).

Transit: A very high number of the UNM / CNM population use ABQRide for transportation. While not exclusively for travel to and from the institutions, there were 11.7 million UNM / CNM trips on ABQRide in 2010, accounting for 15% of total ridership. Notably, this is a 39% increase from 2009 with no change in service or policies.

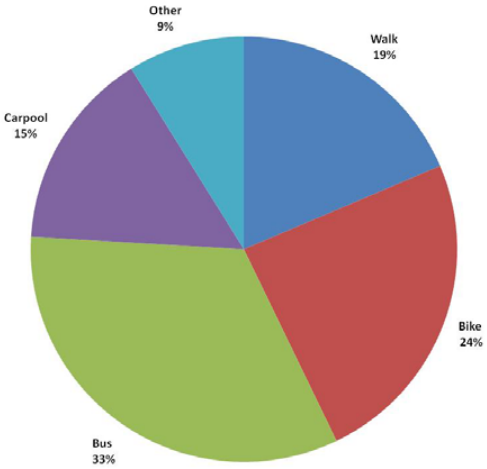
Based on the UNM survey data, the analysis of UNM and CNM parking permit holders and ridership data, bus routes that are direct and have short headways are the most popular with UNM / CNM riders. It is important to note that CNM currently has, for all intents and purposes, no direct and short headway routes.

Supportive polices also contribute to high transit ridership. Funded by UNM, the City, and County, free bus passes are available to all students (UNM extends this to faculty and staff as well). On-campus parking policies and marketing efforts by the institutions and ABQRide also contribute to ridership levels.

Walking: Over half of the UNM survey respondents who lived within 1 mile of UNM reported walking to their destinations. This is an extremely high portion which, as would be expected, decreases with distance from campus. Contours showing the geographic areas within walking time categories for UNM are shown in Map 5.

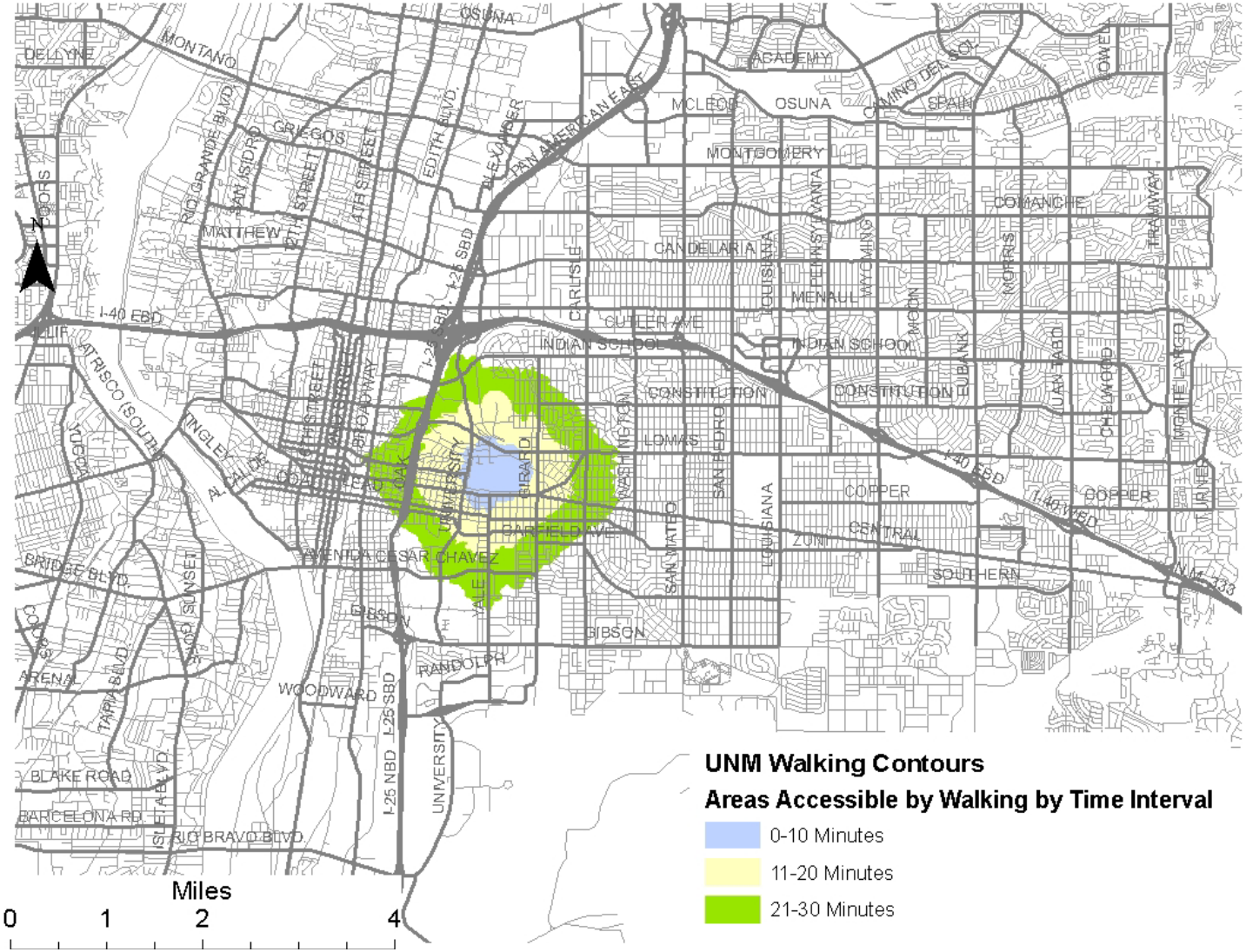
Bicycling: The UNM survey also shows that 13% of the population bicycled to campus. While biking was a popular mode for short trips (almost 70% of bicycling trips were between 1 – 5 miles) a number of trips are also from distances from up to 10 miles. Map 6 shows the bicycling contours for UNM.

Figure 2 — Alternative Mode Choice of UNM Faculty, Staff and Students

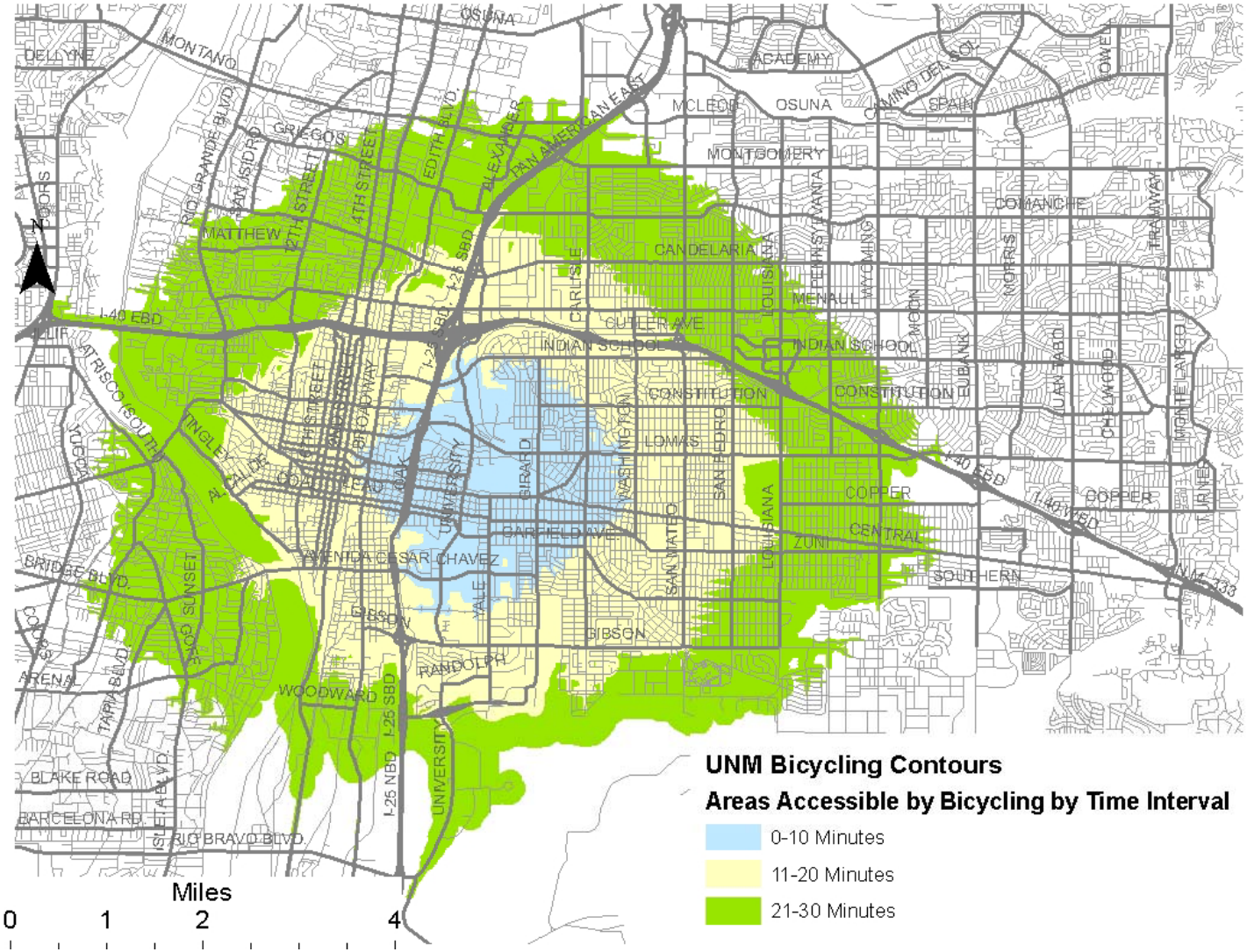


Source: UNM Commuter Survey, Danielle Gilliam, 2010. Analysis by MRCOG.

Map 5 — UNM Walking Contours



Map 6 — UNM Bicycling Contours



f. Public Comments

Comments received in public meetings, e-mails, and hardcopy comment sheets identified a wide range of suggestions, opportunities, and complaints regarding transportation to the institutions. Some common themes emerged from these comments:

Pedestrian Facilities: While a large portion of people living close to UNM campus walk, public comments received during the public meetings echoed the desire for increased pedestrian facilities in the UNM area. These comments emphasized the need for improved safety in terms of pedestrian / vehicle conflicts. Specific suggestions include more pedestrian connections to the campuses to the surrounding neighborhoods and improved pedestrian crossings of Lomas Boulevard and Indian School Road. Other public suggestions included reducing speed limits on residential streets, though this appears partially motivated by the desire to reduce neighborhood through traffic.

Bicycle Facilities: Public comments underscored the role of bicycling to UNM and the desirability of this mode. Specific comments note the need for increased bike paths / routes connecting to the University and connections to the city bike path network.

Traffic Through Residential Neighborhoods: Numerous comments from residents of the surrounding residential neighborhoods took issue with the traffic levels on local streets. Generally, the comments requested that UNM, the City, Bernalillo County, and MRCOG work to deploy measures to mitigate traffic on residential streets.

Opportunities and Recommendations

While completed research shows that some impressive performance has been realized in the area of travel demand management for both UNM and CNM, numerous opportunities exist to achieve even more impressive results. It is also clear that it will be necessary to make further improvements in demand management if the institutions wish to continue to grow and prosper in a manner that is not detrimental to neighboring communities.

A concerted, coordinated and ongoing effort to manage travel demand needs to be established and maintained. It is therefore recommended that UNM, CNM, UNMH, the City of Albuquerque, Bernalillo County, and MRCOG establish a high level interagency **TDM Committee**. The purpose of this committee would be to continue TDM efforts in a more programmatic, formal, and coordinated fashion. The committee would establish priorities, bring staff and other resources to bear on planning and implementation activities, and establish goals for the program. It is envisioned that this committee would meet quarterly. It would be staffed by key members from each organization that would be responsible for managing TDM efforts.

"It is [...] recommended that UNM, CNM, UNMH, the City of Albuquerque, Bernalillo County and MRCOG establish a high level interagency TDM Committee."

The findings indicate that when good transit service is provided, it is utilized at very high rates. In order to improve transit services to UNM and CNM it is recommended that a **task force** comprised of members from UNM Parking and Transportation, UNMH, CNM, ABQRide, and the RMRTD be established. This group would indentify low or no cost, short-term improvements to the existing transit systems (improvements that could be implemented within one year) that have high potential for improving transit accessibility or transit market potential. The task force would also investigate and recommend potential incentive packages for regular users of the transit system. The task force would make recommendations to the TDM Committee.

"...when good transit service is provided, it is utilized at very high rates."

UNM, CNM, and the City of have a mixed history of cooperation in land use and transportation planning in the UNM / CNM area. The significant presence of the institutions in a relatively small geographic area warrants collaborative planning efforts to realize opportunities for all parties. Increased collaboration – not simply cooperation – on **transportation and land use planning** issues in the early stages would facilitate the development of specific projects and is an essential element of a

Opportunities and Recommendations, continued

successful TDM program. On the large scale, increased levels of collaboration in land use and development could propel forward the visions outlined in the Nob Hill and South Yale Sector Development Plan as well as UNM's vision for a "24 hour campus" – both of which would result in a reduction of vehicle trips to the institutions. Other potential opportunities for collaboration include the development / redevelopment of station areas to accommodate UNM / CNM populations, planning of ABQRide bus routes, and integration of institutional and adjacent public and private land uses.

"Parking and access to parking is one of the most challenging issues facing these institutions."

Parking and access to parking is one of the most challenging issues facing these institutions. Developing multiple story parking garages is a costly endeavor, while acres of surface parking utilize land that may be put to better use. The search for available parking results in unnecessary driving to, from, and around the main UNM campus. Parking permitted on adjacent neighborhood streets also contributes to undesirable neighborhood conditions. Parking is a source of revenue for both institutions, which is both an opportunity and curse. To address this issue it is recommended that UNM, CNM and the City of Albuquerque work to develop a **long-range parking and circulation plan**. While it is recognized that a certain amount of parking needs to provided on campus, it is also clear that the long-term accommodation and growth in the supply of on-campus parking (particularly for UNM Main) will exacerbate many of the trends that are apparent today and discourage the use of alternative modes. The focus of this effort would be concentrating future parking needs primarily on the south and north campuses and through signage, education, traffic calming and other measures, ensure that access to parking is provided primarily off streets that are designed to handle these flows (Lomas, Mountain extension, I-25/I-25 frontage and César Chavez Blvd). This effort could also be utilized to negotiate shared use for parking and coordinated parking pricing policies.

"... it is recommended that UNM, CNM and the City of Albuquerque work to develop a long range parking and circulation plan."

Significant **reductions in auto demand** could be achieved at little or no cost by reducing peak student loadings at both UNM and CNM, although it is clear most of the benefit would be realized for the UNM Main Campus. While this objective could be achieved without any coordination, the benefits may be more significant if UNM and CNM made an attempt to coordinate student utilization of both

Opportunities and Recommendations, continued

campuses. Currently both campuses are utilized quite heavily from 9:00 a.m. to 3:00 p.m., but there are marked declines from 3:00 p.m. on. While there are undoubtedly institutional complications that need to be addressed to produce more evenly distributed student loadings throughout the day and into the evening, the benefits may be significant. Other methods that should be evaluated (particularly for UNM) include considering the possibility of two day a week classes (e.g. Monday – Wednesday, Tuesday – Thursday, Wednesday – Friday) and even the possibility of increasing Saturday class loadings. Offering lecture portions of large classes on-line is another strategy worth investigating, as well as varying the cost and location of parking by time of day. While these ideas require further evaluation it is recommended that the TDM Committee take this issue on and task respective staff to develop implementable strategies designed to reduce peak student loadings.

"Significant reductions in auto demand could be achieved at little or no cost by reducing peak student loadings at both UNM and CNM..."

Persons living within 4 miles of these institutions have a very high propensity to take **alternative modes** to campus (primarily walk and bike). Efforts should be made to continue to cultivate this market. This includes the continued implementation of improved pedestrian and bike facilities in the UNM / CNM area, safety and facility improvements (e.g. bike storage and lockers) on campus, and perhaps consideration of a fee reduction for those that do not drive to campus. In addition, bike and pedestrian use should be promoted as part of the overall TDM strategy.

"...bike and pedestrian use should be promoted as part of the overall TDM strategy."

UNM, CNM, and UNMH draw a significant number of trips from long distances (6 plus miles). In many cases **transit** is not a reasonable option because of availability or levels of service. While improvements to transit services can and will occur over time the outward movement of residential areas – and the homes of students, faculty and staff – creates some challenging issues. While many of the recommendations presented above will help with this problem there are other strategies that need to be explored. One of the more obvious is to develop a concerted multiple agency effort to locate more student, faculty, and staff housing on or near campus and on or near existing and planned premium transit routes. While it is clear that many students, faculty, and staff will continue to travel to these institutions by car, it is worth assessing the potential market for more affordable housing in the areas mentioned above. This would primarily be a UNM, CNM, and City effort, both in the short term to assess the

"...develop a concerted multiple agency effort to locate more student, faculty and staff housing on or near campus and on or near existing and planned premium transit routes."

Opportunities and Recommendations, continued

potential demand and to work jointly on a housing strategy. This housing strategy would need to reflect City plans while targeting location efficient opportunities. This effort should also look at employment opportunities that may arise as well.

While organizing **carpools** is often a challenging endeavor, a robust program presents an opportunity to capture some longer distance trips. It is recommended that cooperative carpool programs with CNM – and potentially using the City's existing system – be evaluated. In addition, incentives – including those already initiated at UNM – could be expanded. Potential incentives include premium parking spaces, fee reductions and perhaps other perks like early registration.

"It is recommended that cooperative carpool programs with CNM – and potentially using the City's existing system – be evaluated."

As markets continue to grow in outlying areas, assessing course offerings at **branch campuses** and attempting to capture some of the demand in this fashion would be worthwhile. Finally, many of these trips can be intercepted by the existing and improved transit system before they become a nuisance on or near campus. To accomplish this it will be necessary to develop more park and ride opportunities than exist today and develop more park and rides as the transit system expands. To initiate this effort it is recommended that the transit task force evaluate all existing premium lines to UNM and CNM to identify existing low or no cost opportunities to create park and ride or "pocket park & ride" lots that present the greatest opportunities to intercept auto trips destined for UNM and CNM. Candidate sites may include lots that are not utilized fully during the weekdays (churches), underutilized retail lots (with potential incentives to the owners) and other public resources that may not be fully utilized (community centers, libraries, parks etc). As lots are developed they will need to be signed and marketed to promote usage.

"... assessing course offerings at branch campuses and attempting to capture some of the demand in this fashion would be worthwhile."

The findings show that the UNM shuttle service is carrying significant loadings (8,000 – 10,000 riders per day) between the remote parking lots on the north and south campuses and the main campus. In addition, these volumes are expected to increase in the future due to a number of factors including the location of student housing on the south campus and projected job growth on all campuses. It is also clear that large numbers of CNM students are using premium transit routes along Central Ave (primarily Rapid Ride) and then walking to the CNM. These factors indicate that

"...it will be necessary to develop more park and ride opportunities than exist today and develop more park and rides as the transit system expands."

Opportunities and Recommendations, continued

the corridor between the south and north campuses has the potential to carry a significant volume of transit trips if service is provided that can efficiently connect each campus including CNM. In addition, a more efficient connection in this corridor will increase the appeal of existing premium transit routes serving this area from Central and Lomas.

"...the north south corridor between the south and north campuses has the potential to carry a significant volume of transit trips..."

As a first step towards addressing the problems and opportunities associated with this north–south corridor it is recommended that the partnership pursue a Federal Transit Administration (FTA) compliant **Alternatives Analysis**. The study should start with a broad area bounded by Indian School on the north, Gibson on the south (including the Sunport), Girard on the east, and University on the west. The goal of an Alternatives Analysis is to develop and identify and assess potential transit technologies, alignments, and combinations of the two that would best serve the transit demand in the corridor. A preferred alternative (technology and alignment) is produced through the study. The preferred alternative would be eligible for federal funding for design, environmental certification, and eventual construction under FTAs Small Start or Very Small Starts programs. Due to the increasing federal emphasis on tying transportation, housing, and environmental factors together in project proposals, the Alternatives Analysis should also consider changes to land uses in the area, perhaps even a sector plan update for this portion of the City. This would create additional opportunities to address housing and employment while increasing the possibility of eventual federal funding for transit improvements via a Federal Tiger or Sustainability grant. In addition, the Alternatives Analysis could look holistically at improved bike and pedestrian connections, parking, roadway access, and campus circulation. A broad Alternatives Analysis of this nature may cost up to $500,000 and take a year to complete. However, if the partners in this study were to jointly request a federal earmark from the New Mexico Congressional delegation to fund the study, it is very likely that some Federal funding would be appropriated.

"...it is recommended that the partnership pursue a Federal Transit Administration (FTA) compliant Alternatives Analysis."

Whether part of an Alternatives Analysis of independent, the development of a TDM program that best addresses the needs of the involved parties requires identifying program goals. Since some tools better address some transportation

Opportunities and Recommendations, continued

impacts than other (for example, modifying work / class schedules may reduce peak-hour congestion but will not reduce the overall amount of traffic) identifying and prioritizing these goals is an important step in developing a comprehensive strategy that addresses the range of transportation issues. Potential goals include reducing congestion, reducing the amount of land and financial resources dedicated to parking, reducing travel time and costs, mitigating impacts to surrounding neighborhoods, and improving transportation options for accessing the institutions.

Finally, it is important to note that many of these recommendations are focused on addressing a specific issue or topic. Successful TDM programs require integrated solutions that do not operate at cross purposes. While some of these recommendations can be implemented almost immediately, accurately assessing the effectiveness of these activities is an important step. This evaluation would consider the ability of the tool to achieve the established TDM program goals, implementation timeframe and costs, a realistic assessment of potential funding opportunities and the likelihood of implementation, region wide impacts, etc.

Mid-Region Council of Governments
809 Copper Ave. NW
Albuquerque, NM 87102
(505) 247-1750
www.mrcog-nm.gov