

# **Transportation Alternatives Analysis Report**

# Montaño Road from Coors Boulevard to 4<sup>th</sup> Street and 4<sup>th</sup> Street and Montaño Intersection

# **Final Draft**

**Prepared For** 

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### 1. INTRODUCTION

### 1.1 Development Patterns

Historic growth in Albuquerque has expanded under the influence of the Rio Grande, from the compact Old Town just east of the river, eastward to the current downtown during the railroad era then outward in all directions. North-South mobility emerged along several routes, including the rail line, 4<sup>th</sup> Street (as El Camino Real and Route 66) and 2<sup>nd</sup> Street. Crossing the river to the west had been limited until the relatively recent bridge construction to facilitate roadway access.

The suburban pattern of growth set up the classic controversy experienced repeatedly in American cities, especially after WWII. Newer growth, farther out in the suburbs, spawned traffic patterns that significantly impacted older communities. Daily flows, inbound in the morning and outbound in the evening, originating in newer suburbs, passed through older neighborhoods generating severe pressure for widening existing streets.

In rare occasions, where a traditional street network was a normal part of urban design, such as the areas around downtown and areas east of I-25, congestion was not as severe. Traffic loads spread more evenly on groups of close-knit streets within the network. Smaller blocks help this load-sharing pattern.

### 1.2 Montaño Bridge

In other areas, where natural features such as rivers interrupted the economical development of fine-grained streets, a few river crossings were built. Congestion began to build on streets leading to the bridge approach corridors. Point loadings of bridge traffic compete with other traffic at the first major cross street. At these intersections, congestion usually creates potentially serious impacts to older existing communities. Careful consideration of these impacts is necessary for balanced community vitality, for both new suburban growth and old existing communities.

In the vicinity of Los Griegos, the Montaño Road corridor was expanded, after significant controversy, including a two-lane Rio Grande bridge. River crossing bridges at Montaño, I-40 and Paseo del Norte both served and further encouraged new growth west of the Rio Grande. The Montaño corridor and bridge form one of the rare river crossing linkages between new western development and older communities on the eastern side.

### 1.3 Historic 4<sup>th</sup> Street

In 2003, local residents and business owners formed the 4th Street & Montaño Area Improvement Coalition, which is devoted to making the 4th and Montaño area a better place to live, work, and do business. This area is bounded by 2nd Street to the east, Douglas MacArthur to the south, Solar Road to the north, and the Los Poblanos Open Space to the west. The coalition grew out of earlier grassroots efforts to improve 4th Street. These include initiating the City's current plans to improve the 4th and Montaño intersection and by working with the City's Zoning Department to preserve the neighborhood integrity of Guadalupe Plaza. The Coalition includes local residents, neighborhood associations and business owners, as well as people

residing or working in other parts of Albuquerque who would like to see the area become a "jewel" for all City residents.

The Coalition has organized subcommittees to carry out projects that implement the following four community goals, and the Coalition Executive Committee encourages, assists and supports successful, timely completion of both near-term and longer-term goals.

- 1) Traffic: Safe Vehicular Flow and Improved Transit
- 2) Identity: Rural/Urban Character Preserved
- 3) Pathways: Improved Trails with Pedestrian, Bicycle and Equestrian Amenities
- 4) Revitalization: Commercial and Community Design and Development

Any proposal for the Montaño corridor between 4<sup>th</sup> Street and the Rio Grande must consider these goals and other concerns expressed by citizens traveling along and living adjacent to the corridor.

The remainder of this report evaluates the ability of proposed solutions to balance the mobility needs of Montaño corridor travelers with the livability and community character of Los Griegos neighborhoods. A solution that encourages the movement of people and enhances community character is much needed.

### 2. EXISTING CONDITIONS

To understand alternative designs proposed for improving mobility and character in the Montaño corridor, several key conditions along the corridor must be highlighted. The land use along Montaño has developed as a series of small farms, large lots residences and small businesses. This has resulted in dozens of access points along the corridor. Before the Rio Grande river bridge was built, Montaño operated as a two-lane road terminating at Rio Grande Boulevard. The road served as a mixture between a rural collector and residential street.

With the building of the bridge, the road operated as a principle arterial, converting an existing semi-residential rural road into an urban arterial. Access into and out of adjoining properties had to be protected while allowing for a significant increase in traffic. The engineers were able to protect access points with the installation of the bike lanes and shoulders.

### 2.1 Cross Sections

Montaño Road has urban character on the eastern section, changes to suburban with a planted median in the central section and remains suburban as it crosses the Rio Grande. The eastern three lane section consists of one lane in each direction, a wide central lane allowing left turns across the center line, outside recovery lanes and bike lanes adjacent to the gutter and curb. Where the median is introduced, driveways are less frequent and separation of oncoming traffic increases the motor vehicle safety by reducing the potential for east-west collisions.

Although a center lane allows left turn access to and from side street driveways on the eastern sections of Montaño Road, high peak hour volumes thwart left turns from adjacent land parcels. High off peak speeds also contribute to difficult left turn access.

### 2.3 Facility Constraints

Two major factors influencing geometric design of new lanes on Montaño include the cross section of the Rio Grande River bridge and the under pass at Rio Grande Boulevard NW. The river bridge has a center traffic barrier separating east and west flowing traffic. Any modification to the barrier would be extremely expensive. Outside recovery lanes are important to maintaining vehicular flow on the bridge during vehicle breakdowns.

The grade separation between Montaño Road and Rio Grande Boulevard places bridge columns directly in the Montaño Road centerline. Again, this existing bridge element would make any proposed lane change geometry highly expensive.

### 2.4 Bicycle Facilities

In the context of Montaño Road, existing bicycle facilities are bike lanes on the street. These lanes are part of the regional bicycle network and provide a safe, fast, and efficient route for transportation bicyclists. The specific design of the Montaño Road bike lanes is discussed under Design Goals, below, but as an introductory statement, bike lanes are generally considered transportation facilities for bicycles, whereas separate bicycle or shared use paths are generally considered more as recreational facilities for bicyclists, with transportation as a dual or even secondary consideration.

### 2.5 Transit Facilities

The City of Albuquerque has advanced transit services for a city of its size. In addition to the fixed route system shown in **Figure 1**, the city also has a bus rapid transit system and is inaugurating a commuter rail system connecting to communities to the north and south. According data from the 2002 National Transit Database (NTD), SunTran, Albuquerque's transit system, carries over 7.5 million passenger per year and drives some 5 million miles using 106 transit buses. System headway (the time between buses) averages 17 minutes, which indicates that some routes have very short headways. Service area population density is 4,016 persons per square mile, which works out to about 2.6 households/acre given Albuquerque's 2000 Census household size. For a sun-belt city, this level of service area density is quite good.

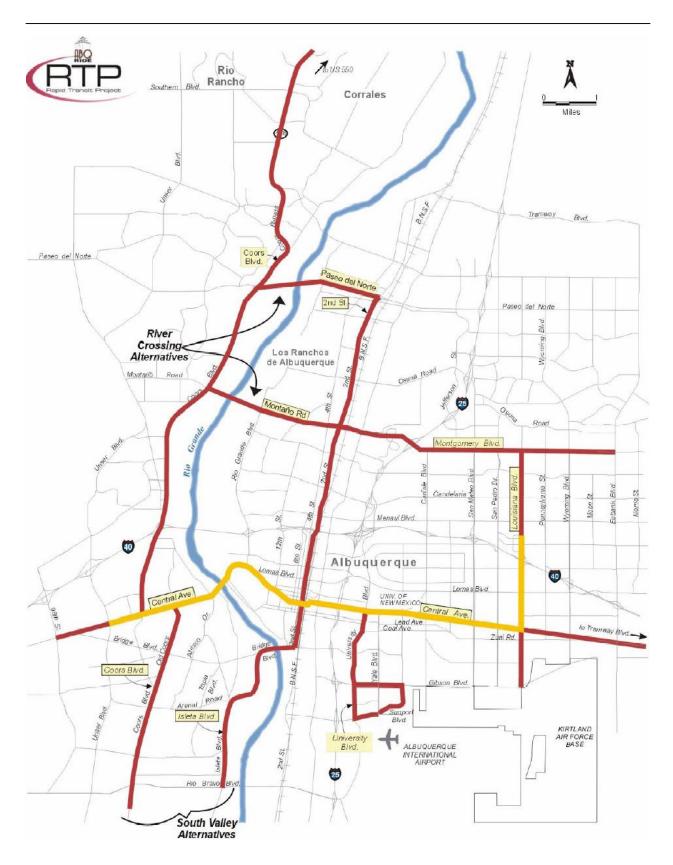
Albuquerque has put many of the elements in place to make transit a serious transportation option. The *Belen to Santa Fe Commuter Rail Project Overview and Status of Project Elements* report describes the proposed commuter rail system and the projections for traffic congestion and population growth in the region. The report indicates that "...despite extensive expenditures on new roadway capacity, mobility in the region is expected to decline significantly over time." The report proposes to make transit a larger part of the regional transportation system. For this to occur, transit must also be a part of the local transportation system, and walkability must underlie everything, as all transit passengers are also pedestrians.

As **Figure 1** indicates, the Rio Grande is a major barrier to east-west travel across Albuquerque. Currently, there are only 2 transit connections across the river north of downtown. The Montaño Corridor has been proposed as a new connection for the bus rapid transit system (**Figure 2**) and the transit bus system (**Figure 3**). Adding this connection would, in fact, increase the level of transit connectivity in the city, thereby also supporting the commuter rail effort as well. This report will examine in greater detail the issues and opportunities associated with Montaño Road as a transit corridor, although the report is not a transit corridor study and will not achieve that level of analysis.

# ABQ Ride System Map

Figure 1. Transit System Map

Figure 2. Bus Rapid Transit System



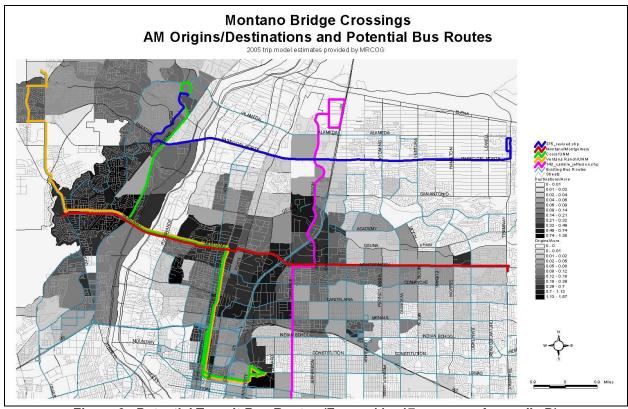


Figure 3. Potential Transit Bus Routes (For an 11 x 17 copy see Appendix D)

### 3. DESIGN GOALS

Specific design goals have been identified by the team in consultation with the Steering Committee and City Staff. They include the following:

- 1) Maximize corridor & intersection mobility
- 2) Maximize walkability
- 3) Increase facility efficiency
- 4) Minimize impact of additional traffic on existing land-uses/context
- 5) Maintain current bike lane width and location
- 6) Maintain recreational trail network
- 7) Evaluate viability of transit
- 8) Reestablish neighborhood connections

### 3.1 Maximize Corridor and Intersection Mobility

The first goal, maximize mobility, can conflict with the remaining eight goals if too much emphasis is placed exclusively on auto and truck movements. Increased motor vehicle mobility usually runs counter to increased pedestrian mobility, often negatively impacts existing land use, thwarts the viability of transit and neighborhood connections. However, if creative design thinking is applied, these conflicts can be overcome, or at least made compatible. When all design effort is focused on automobile capacity, the other goals are not achievable. When

people moving capacity is highlighted and speed is managed to enhance capacity, many other goals can also be achieved. Walkability is enhanced when pedestrians feel more comfortable adjacent to the roadway corridor. Urban streetscape design, considering street width, trees and parking is a better fit with desired local context and enhances trail and bike lane design.

### 3.2 Maximize Walkability

### 4th Street and Montaño

To estimate the effect that transportation design would have on the safety and comfort of pedestrian movement, HPE designed a series of walkability indices that could be applied to each alternative. Application of the walkability index yielded quantified measures for three conditions, from existing conditions to a complete walkable buildout for the intersection of 4<sup>th</sup> and Montaño as a conceptual design using urban streetscape concepts.

To test the potential walkability of the intersection of Montaño Road and 4<sup>th</sup> Street, the Index was first applied to existing conditions. Walkability scores were low in several factors important to pedestrian comfort yielding a score of 26, Unfriendly to Walking.

Subsequently, a potential Phase I design was developed. Features were added to increase walkability, including speed limit reduced to 25 mph, number of lanes reduced to 3 at 11 feet each, added parallel on-street parking, expanded sidewalks to 6 feet minimum. This resulted in a Walkability Index score of 50, placing the intersection in the Walkable category.

An intersection is the product of two lines or streets. It was hoped that the City will have completed a Design Charrette by the end of this Study for the segment of the corridor area north Douglas McArthur. Until the City completes the Corridor Study for 4<sup>th</sup> Street underway, and determines the cross-section for that corridor additional analysis is not possible. We recommend evaluating the intersection design mentioned in this report as part of that study as well, with more complete design work at that time.

Finally, a buildout plan called Phase II was developed. Two story buildings were added to the back of sidewalk to create proper enclosure, sidewalks were expanded to 10 feet, block size was reduced to the 300 to 400 foot range and a full range of mixed uses were specified. The Walkability Index score increased to 86, an increase to Moderately Walkable from just Walkable. A detailed overview of the walkability index application is found in **Appendix A**.

### 3.3 Increase Facility Efficiency

Given the rare river crossing opportunity afforded by the Montaño Bridge, efficiency of transportation mobility should be maximized. Of course this must be considered within the goals of low impact to adjacent community character. Any alternative must meet these potentially conflicting goals. One good measure of efficiency in meeting both goals, involves maximizing movement of people versus just motor vehicles. The introduction of criterion "persons transported per hour" allows for a long range strategy to make better use of this limited resource. Incentives for transit and carpool usage are a key to moving more people in the Montaño Corridor.

### 3.4 Minimize Impact of Additional Traffic on Existing Land Uses/Context

The Montaño Corridor consists of varying context as one moves from west to east; including pleasant rural settings, quiet suburban development and more active urban character with buildings near the street. Greater queuing and traffic congestion would have a negative effect on adjacent rural and urban lands.

### 3.5 Maintain Current Bike Lane Width and Location

Figure 4 illustrates the current cross section of Montaño Road, including the bike lanes. This cross section is unusual in that the bike lanes are located outside of the 9 foot wide "emergency shoulder." Bike lanes are normally placed adjacent to the travel lanes. This location allows bicyclists to more safely monitor and coordinate with automobile traffic. In situations where traffic speeds are higher than 45 mph, a more common solution is simply a wider bike lane or shoulder, rather than separation of the bike lane from the travel lane by the shoulder. AASHTO's Guide for the Development of Bicycle Facilities indicate that the bike lane is adjacent to the travel lane and that wider bike lanes may be desirable in areas where traffic speeds exceed 50 mph or truck traffic is heavy.

HPE recommends that if Montaño Road is reconfigured, the bike lanes be relocated adjacent to the outside travel lane. The width of the bike lane should be a minimum of 5', although as indicated in the AASHTO Guide, the entire shoulder width can be used by bicyclists.



Figure 4. Montaño Bike Lane

### 3.6 Maintain Recreational Trail Network

The recreational trail system crosses Montaño Road at several locations. The historical crossings are indicated in Figure 8 (p. 12). Although recreational in purpose, such trails

frequently serve as transportation facilities as well. At locations where the trail crosses Montaño Road, traffic on Montaño should be calmed to a speed safe for pedestrians. This can be accomplished by narrowing the lanes and creating a sense of enclosure on the approach to the trail intersections. To create enclosure at the intersection approach, a variety of options are available, including plantings, structures, and colored/textured pavement.

The recommended approach is to provide tree plantings adjacent to the roadway and at the trail crossing itself, and provide a colored and textured crossing at the trail intersection. If trail traffic is significant, a pedestrian activated signal can also be installed. However, a two-lane street with narrow (10') travel lanes should not present a major crossing barrier, so the signal may not be warranted. The proposed plan view for a trail crossing area is shown in **Figure 5**, and **Figure 6** is a perspective view. The proposed section of a trail crossing is shown in **Figure 7**. This section includes two 6' wide pedestrian refuge areas, one on either side of the center HOV lane.

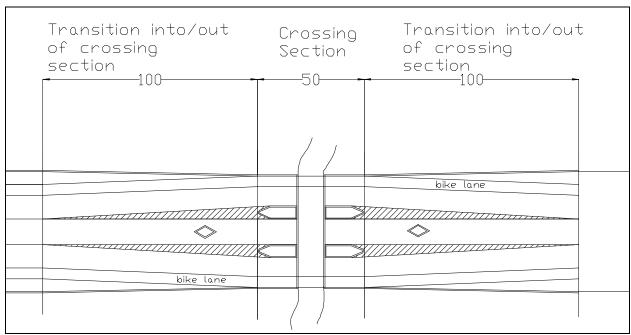


Figure 5. Plan for Trail Crossing

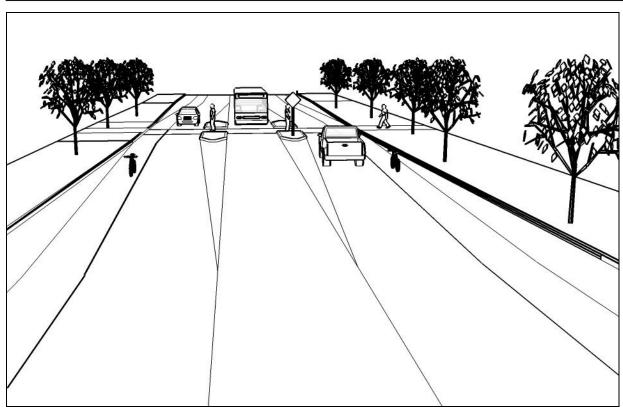


Figure 6. Perspective View of Trail Crossing with Center HOV Lane

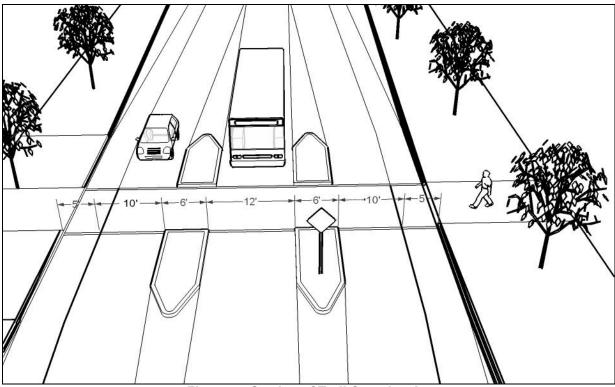


Figure 7. Section of Trail Crossing Area

### 3.7 Evaluate Viability of Transit

SunTran and MRCOG, as well as the Commuter Rail Study, have performed a number of studies evaluating the feasibility of transit in Albuquerque. The Montaño corridor has been identified in several plans as a location for local bus service and bus rapid transit service. Hall Planning and Engineering has followed this lead in developing concepts for the Montaño Road corridor that support the inclusion of transit facilities such as bus stops and HOV lanes along the corridor. As mentioned above, population density in Albuquerque is relatively high for southwestern cities, which supports the assertion the community is committing to transit as a transportation solution.

Montaño Road-Montgomery Boulevard is an excellent candidate for a transit-intensive corridor. It is one of only 3 arterials (not including Interstate 40) in the City that stretch from the Sandia Mountains to the Petroglyph National Monument. The roadway traverses the City's most populated quadrant (the northeast heights) and an expanding quadrant (the northwest mesa). It provides an opportunity for transfer points with the routes that serve the City's employment and shopping areas, as well as the soon-to-open commuter rail line. A report generated for the commuter rail study by Parsons Brinkerhoff using a model they developed for the City estimated that a Montaño/Montgomery route could have upwards of 1,414 riders a day or 516,110 a year. (See map **Appendix D**)

The Transit Department reported that the cost to operate the route less the fare received would be about \$1,094,029.00 annually. These numbers do not assume the presence of a commuter rail station on Montaño Road at the Burlington Northern and Santa Fe Railroad Tracks. The Mid Region Council of Governments has stated that if the City or the State could acquire land for a station at the intersection of the tracks and Montaño it would be willing to open a commuter rail park and ride and transit station at the site. This has the potential for generating additional riders. Once the commuter rail is operational, Montaño will be a critical link to allow access between the Montaño commuter rail station and the west side of the river. If Montaño is not a transit corridor, residents on the west side of the river will need to travel several miles north or south to cross and access rail transit.

The potential for transit success would be further strengthened if development on each side of the river becomes more compact and walkable. As this land redevelops, transit oriented design should be specified in coordination with the transit agencies. Policies could be adopted in the short term that would ensure long term development of the area in a more pedestrian and transit-supportive style.

Transit represents the eternal chicken-or-the-egg question. Should communities first create transit-oriented land uses and design and then have successful transit, or should communities first create top-notch transit systems and hope the land uses will catch up? In Albuquerque's case, transit performance and planning are efficient and visionary, respectively, and land use support for transit, measured in part by population density, is greater than many cities. Ultimately, a community must decide the type and location of transportation it will have, namely, walkable and multimodal or automobile-only. A diversity of character is appropriate for different land use designs in different sections of the city.

### 3.8 Re-establish Neighborhood Connections

When motor vehicles gather in great numbers on roadways, neighborhoods begin to isolate themselves by cutting off access to and from these thoroughfares. Dead end streets and street closures are highly prized near high-speed streets. The unanticipated consequence of this strategy is poor circulation for residents and long delays while accessing major streets at the reduced number of entry points. Pedestrians are also restricted in choice of path efficiency with street closures and culs-de-sac. A greater balance is achieved if some careful reconnections are achieved. The citizens committee working on this project identified several historic crossings important to the neighborhood. They include, the Harwood Lateral, Guadalupe Trail and the Griegos Drain. (See **Figure 8**)

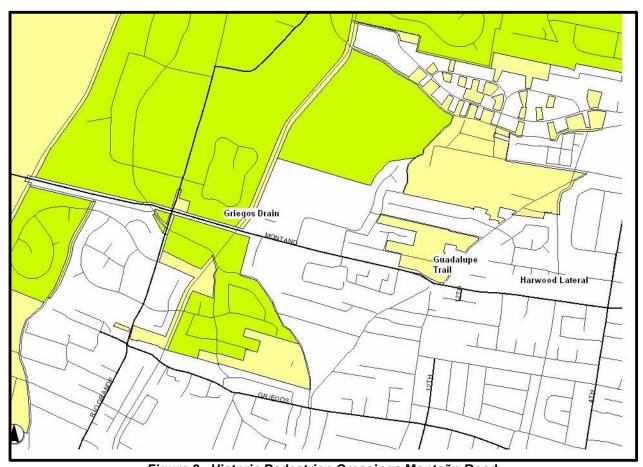


Figure 8. Historic Pedestrian Crossings Montaño Road

### 4. ANALYSIS OF ALTERNATIVES

Initially four alternatives were considered for improving the Montaño corridor; Alternatives A through D. During the course of the study, several alternatives were eliminated from further consideration. Alternative C HOV Lanes on the Inside general purpose lanes on the outside was eliminated due to side access limitations and enforcement difficulty. Alternative D HOV Peak Hours Only was considered too limited in achieving the goals of moving people.

Overall summary comments documenting alternatives analysis can be found in the Alternatives matrix at the end of the report.

### 4.1 Four General Purpose Lanes

One of the options analyzed would involve re-striping the current corridor between Coors Boulevard and the intersection of Montaño and 4<sup>th</sup> Street from the current cross section(s) to four lanes. Those four lanes are intended to be general purpose lanes. General purpose lanes are defined as lanes which carry all types of traffic with no limitations. The vast majority of lane miles in the United States are General Purpose. The emphasis of General Purpose lanes is to move cars, and consequently they do not provide any incentives to commuters to use transit or take part in ride sharing.

This solution appears to be very attractive for those who are looking for "the silver bullet" to the traffic problem in the Montaño corridor. Unfortunately, the "silver bullet" falls far short of addressing the problem in a meaningful way. It is true that traffic congestion may be improved on the east end of the Montaño corridor in the morning peak. Unfortunately, the congestion will be significantly increased at the signalized intersections of Montaño with 4<sup>th</sup> Street, due to the capacity imbalance that will occur at the intersection. This is due to the inability of those intersections to handle four lanes of "free flow" traffic entering the intersections from the east. The same problem will occur at the intersections of Coors with Montaño in the evening peak hour.

A demand study conducted by the Mid Region Council of Governments in March of 2005 found that restriping Montaño Road as 4 general purpose lanes would reduce the congestion levels during peak hours from Level of Service F and E to Level of Service C and D (See **Appendix B**).

The LOS letters, which range from A through F, are similar to but not analogous to letter grades on a school report card. Essentially, LOS A indicates a street or intersection that is lightly-used and possesses much more capacity than needed for existing traffic. Often such streets or intersections are on low-volume streets, or perhaps on a newly-constructed street or intersection that has not yet filled with traffic. LOS B and C indicate progressively busier intersections or streets that may also have greater capacity than is needed for current traffic demands. Given the cost of building and maintaining streets and intersections, constructing a road that operates at LOS A may be compared to preparing a dinner for 25 people and having only 5 guests attend.

LOS D and E indicate intersections or streets that are approaching or have reached their traffichandling capacity. These intersections or streets are very busy and move higher volumes of traffic. Because streets and intersections are expensive to build and maintain, many if not most cities specify LOS D or E as the minimum acceptable LOS on their transportation network. Operating at LOS D or E ensures that streets and intersections are performing at their most effective traffic-handling capacity. To continue the previous analogy, this would be like cooking dinner for 25 people and having 27 people show up – a few extra places can always be made at the table, and everyone will still get something to eat.

LOS F indicates a street or intersection operating beyond capacity. Such intersections and streets will have long lines of traffic at peak hours of the day and are generally viewed as being overloaded. This is like preparing dinner for 25, and having 40 guests arrive! In this situation, some guests might leave and find dinner elsewhere, some would still mange to squeeze in a seat at the table, and some might wait a little longer while a second course is prepared just for them. Popular restaurants often experience "LOS F" on a busy night, in this analogy.

Transportation planners and traffic engineers generally attempt to keep intersections and streets from operating at LOS F; however, in some instances operating at LOS F may be preferable to a street improvement, such as adding travel lanes, when such improvements would harm the urban or historic character of an area. In such instances, travelers must accept a trade-off of congestion and traffic delay in exchange for the preservation of the other desirable qualities of the area.

The MRCOG study also found that in the next 10 years, traffic on Montaño Road roadway will only increase by 3% as new lanes on Interstate 40 come on line. A 3% percent growth rate over 5 years does indicate that some new capacity on the roadway might be enough to improve the traffic flow. The study found that four lanes would still result in traffic congestion, but with four lanes, the 50+ driveways and access points along the corridor would no longer have an acceleration and deceleration lanes.

The Montaño and 4th Street Intersection provides a good example of shortcomings of four laning Montaño Road, in terms of capacity increase. Traffic engineering standards indicate 1,800 vehicles per hour is the generalized capacity of an uninterrupted single lane roadway. About 1,800 vehicles will flow through a traffic signal that is green all the time, but if it's green only one-third of the time, only about 600 vehicles per hour in the peak hour can flow through the intersection in that lane. With the assistance of turn lanes and signal timing, the expected maximum capacity of an intersection through-lane is 800 vehicles per hour. The intersection at 4<sup>th</sup> Avenue has two through lanes, allowing a maximum of 1,600 vehicles per hour in the through lanes.

If the lanes on the Rio Grande bridge double and if, as the MR-COG study shows, the lanes nearly fill up again, then the demand on the traffic signal could be 3000 vehicles per hour – almost twice the capacity of the 4<sup>th</sup> Avenue intersection today. Therefore, without somehow increasing the capacity of the 4<sup>th</sup> Avenue intersection, four-laning Montano will not result in a true increase in vehicle capacity – it will simply create more lanes of congestion in the future. The travel time from Coors through Montaño and 4<sup>th</sup> Street will not be reduced and the intersections of Montaño with both Coors and 4<sup>th</sup> Street will experience greater failure. Consequently, the "solution" will not accomplish its goal of solving the traffic problem.

The four General Purpose lane solution will make crossing of Montaño by pedestrians even more daunting than today, since the pedestrians will have to negotiate four lanes of traffic. During both peak and off-peak hours the crossing by pedestrians will be problematic, especially

in locations where the four lanes of traffic are moving at higher speeds. There are some features that can be incorporated into the cross section to reduce vehicle speed and improve the ability of pedestrians to cross the corridor.

The walkability of this option will be reduced from the existing Montaño corridor cross section. This is due to higher speed traffic being moved closer to the sidewalks, thereby decreasing the comfort of the pedestrian. The reduced walkability will also have a negative impact on the proposed transit system in the corridor, since pedestrians help to create the market for the transit system.

Additionally, since the buses that are part of the proposed transit line will have to use the General Purpose Lanes, transit will become a much less viable option, since there will be no time advantage for commuters to use transit for their commute.

Finally, there is the issue of side access for those living along the Montaño corridor. The four General Purpose lanes will create the worse case for their access to the corridor, especially during the peak hours. Those trying to enter the corridor will face up to four lanes of traffic when trying to turn left, greatly increasing the potential for conflict points. Traffic attempting to turn left across Montaño will need to wait for a gap in at least three different lanes – the two adjacent right-bound lanes and the closest left-bound lane. There will be no provision for refuge or staged left turns, as exists now with the center turn lane and medians.

Based on the results of the March 28, 2005 MRCOG traffic projections report, significant latent demand exists for the Montaño corridor, meaning that while a four lane option would provide an initial increase in gaps through the spreading of existing traffic over four lanes, any additional capacity gains will be lost as latent demand puts additional trips on Montaño Road. *Latent demand* describes trips that are currently deferred due to congestion but are made once additional capacity is provided. In congested areas, latent demand creates the phenomenon of new lanes filling up almost as soon as they are opened. Therefore, any increase in gaps due to the addition of general use lanes is likely to be temporary, leaving local residents in the future with four congested lanes to cross, instead of two.

In conclusion, while the proposed implementation of four General Use lanes, appears on the surface to be an "easy" solution to the congestion problem, it has numerous negative consequences to walkability and bicycling, feasibility of transit, and access to the corridor by those adjacent to Montaño, and as mentioned above, does not solve the corridor's congestion problems due to the capacity imbalance at the signalized intersections of Coors and 4<sup>th</sup> Street. Therefore, while the cost of implementation and operation is low, the benefit will be low to non-existent.

### 4.2 Four Lanes with Outside HOV/Bus Lanes

The second option that was analyzed is an option which would involve re-striping the current corridor between Coors Boulevard and the intersection of Montaño and 4<sup>th</sup> Street from the current cross section(s) to four lanes. However, in this case, two of the four lanes would be dedicated to High Occupancy Vehicle (HOV)/Bus lanes and two would be General Purpose lanes. HOV lanes are available for use by automobiles with two or more passengers. The purpose of HOV lanes is to move people, not just vehicles. This is necessary to provide incentives to commuters to use transit or take part in ride sharing. The incentive is created by

freer movement of the HOV/Bus vehicles through the corridor, while the General Purpose lanes are experiencing heavier congestion.

The HOV/Bus lanes would be located on the outside of the General Purpose lanes. This is done to facilitate the access to buses by passengers in the corridor and improve ease of enforcement of the HOV lane.

With the river crossings of the Rio Grande River being very few, and the potential for new river crossings highly improbable, the importance of reducing vehicle demand while maximizing transportation capacity across the river at every existing location becomes more important. The only viable long-term solution is to increase the occupancy of the vehicles crossing through those corridors. Each and every person who leaves their automobile at home through ride sharing or riding transit eliminates another automobile from the vehicle stream while maintaining the same number of "person trips" through the corridor. By reducing the vehicle trips through the corridor, balancing of capacity, meaning just enough vehicles passing through the intersection as the signal can process in an hour, at all of the intersections through the corridor will be improved over the option utilizing four General Purpose lanes.

The two lane HOV/Bus and two-lane General Purpose solution will make crossing of Montaño by pedestrians less difficult than the four General Purpose lane option due to the increased gaps in the HOV lanes. This is still not optimal, since the pedestrian will have to cross four lanes of traffic. Since the intent of this option is to improve the mobility of people though the corridor, we propose to incorporate features into the cross section to reduce vehicle speed and improve the ability of pedestrians to cross the corridor in order to facilitate increased use of transit.

The walkability of this option will be reduced from the existing Montaño corridor cross-section but will be greater than the option with four General Purpose lanes. This option will still have higher speed traffic closer to the sidewalks, thereby decreasing the comfort of the pedestrian. However, since the volumes of traffic should be reduced from that in Option A, and since transit will be included in the corridor, walkability will be increased over that of Option A.

Again, there is the issue of side access for those living along the Montaño corridor. In this case, those trying to enter the corridor will still face up to four lanes of traffic when trying to turn left, increasing the potential for conflict points. However, with buses stopping to admit passengers and the larger number of gaps in the HOV/Bus lane, it will be easier for those adjacent to the corridor to enter the traffic stream. Traffic attempting to turn left across Montaño will need to wait for a gap in at least three different lanes – the two adjacent right-bound lanes and the closest left-bound lane. There will be no provision for refuge or staged left turns, as exists now with the center turn lane and medians.

In conclusion, the proposed implementation of two HOV/Bus and two General Use lanes, offers improved "person" capacity to the Montaño corridor while reducing the vehicle trips. This will increase the feasibility of transit, and access to the corridor by those adjacent to Montaño, and as mentioned above, will improve the balance of capacity at the signalized intersections of Coors and 4<sup>th</sup> Street. In terms of benefit cost, the cost of implementation and operation will be greater than that of the four General Purpose lanes due to increased signing, marketing of transit, and enforcement of the HOV/Bus lanes, the benefit will be visibly greater than Option A.

### 4.3 Three Lanes with Reversible HOV/Bus Lane

The third option that was analyzed would involve re-striping the current corridor between Coors Boulevard and the intersection of Montaño and 4<sup>th</sup> Street from the current cross section(s) to three lanes. In this option, one of the three lanes would be dedicated to a reversible High Occupancy Vehicle (HOV)/Bus lane and two lanes for General Purpose traffic. The direction of flow of the HOV/Bus lane would be reversed utilizing signal systems during the day to accommodate the dominant flow of traffic. HOV lanes are available for use by automobiles with two or more passengers. The purpose of HOV lanes is to move people, not just vehicles. This is necessary to provide incentives to commuters to use transit or take part in ride sharing. The incentive is created by freer movement of the HOV/Bus vehicles through the corridor, while the General Purpose lanes are experiencing heavier congestion.

As discussed in the previous option, the limited river crossings of the Rio Grande River makes reducing vehicle demand while maximizing transportation capacity across the river more important. Two locations deserve special attention in implementing the three lane cross section. Those locations are across the Rio Grande River and at the overpass of Montaño. At the bridge over the Rio Grande, the three lane cross section would transition to four lanes in order for the HOV/Bus lane to be located on the inside of the General Purpose lanes. On either side of the bridge, the three lane section would resume. Similarly at the overpass crossing Montaño, the three lane cross section would become four lanes just before the overpass, and return to three lanes once past the overpass. In the area of the overpass the HOV/Bus lanes would be on the inside of the General Purpose lanes, in the same fashion as over the Rio Grande. To create the reversible lane, the medians would have to be reconstructed/relocated. Essentially, the existing median material would be moved 5 to 6 feet outward from the centerline to create two smaller medians (though wide enough for landscaping) between the HOV and general use lanes. This design is illustrated in Figure 9. In this concept sketch, the Montaño overpass is shown from the east. The center HOV lane splits at the entrance to the underpass (there is a gate that will prohibit wrong-way traffic during the appropriate time of day). On the far-side of the overpass, the HOV lane is shown as two lanes as described above.

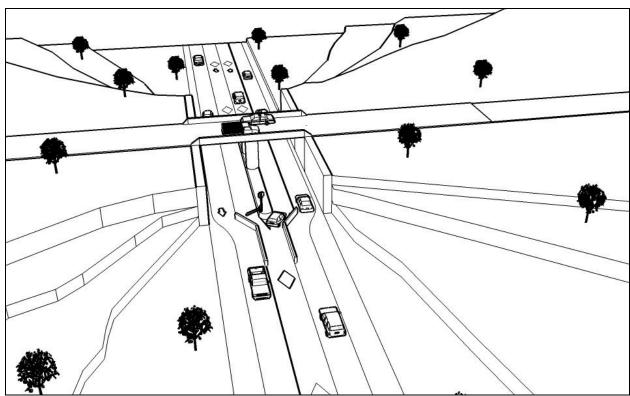


Figure 9. Concept Sketch of Montaño Underpass, Looking West Showing How Center HOV Lane Splits Around the Bridge Support

Intersection geometry with the reversible HOV/Bus lane will work similar to the current solution for the bus rapid transit system in use in Albuquerque. Lead-lag (also known as que jumper) signalization will allow the HOV vehicles to get a head start at traffic signals, and left turn signals will provide turning capability for the other lane movements. Vehicle entering Montaño from side access driveways would be able to travel to a signalized intersection to turn left using this signal pattern. Alternatively, roundabouts could be used at signalized intersections. HPE has provided a concept drawing for this approach as **Figure 10**.

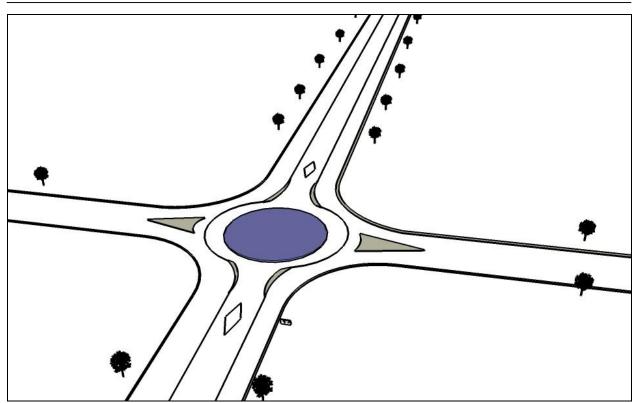


Figure 10. Concept Drawing of Center HOV Lane at a Roundabout

The reversible HOV/Bus lane with two lanes for General Purpose solution will make crossing of Montaño by pedestrians much less difficult than Options A or B due to the reduction in number of lanes that the pedestrian has to cross. Again, since the intent of this option is to improve the mobility of people though the corridor, we propose to incorporate features into the cross section to reduce vehicle speed and improve the ability of pedestrians to cross the corridor in order to facilitate increased use of transit. Pedestrian refuge features would be proposed in order to allow the pedestrian to cross one lane at a time with a place for refuge between each lane (see Figure 6, p. 10, above).

The walkability of this option will provide the best balance between walkability and the corridor's capacity for traffic since the traffic will be further away from the pedestrian than Options A and B. Traffic volumes should be reduced from Option A, and since transit will be included in the corridor, walkability will be significantly increased over that of Option A. With the reduced cross section, there will be additional opportunity to improve the amenities for pedestrians as well.

Again, there is the issue of side access for those living along the Montaño corridor. In this case, those trying to enter the corridor will have to deal with three lanes of traffic when trying to turn left, reducing the conflict points compared with Options A and B. Again, with buses stopping to admit passengers and the larger number of gaps in the HOV/Bus lane, it will be easier for those adjacent to the corridor to enter the traffic stream than with Option A. Vehicles turning right from a side access street or driveway (at an unsignalized intersection) will simply turn out at the next available gap in traffic.

Vehicles turning left from a side street or driveway will have two options, either of which require finding a gap in at most two lanes simultaneously: if traffic is light or if the side access street is located far from a signalized intersection, left turns can be made by waiting for a gap in the right-bound lane of traffic, crossing to the HOV lane, and traveling in the HOV lane a short distance before merging into the left-bound lane. If traffic is heavy or the side street is located adjacent to a signalized intersection, left turns can be made by turning right with a gap in the right-bound lane, going to a traffic signal, and making a U-turn with the left turn signal. Both of these options require fewer gaps in traffic than the four general purpose lane or four lane HOV alternatives.

Although a center lane allows left turn access to and from side street driveways on the eastern sections of Montaño Road, high peak hour volumes thwart left turns from adjacent land parcels. High off peak speeds also contribute to difficult left turn access.

### **Construction Costs**

Rather than focus on the total costs for each alternative, HPE focused on the relative cost difference between the Reversible Three Lane HOV Alternative and the Four Lane HOV Alternative. The following describes our concept for the reversible "three lane" section. Traveling from west to east, the cross section will initially be four lanes from Coors Boulevard to just east of the Rio Grande Blvd N.W. grade separation. This will allow the bridge over the Rio Grande to remain as is today. Likewise at the grade crossing with Rio Grande Boulevard N.W., no changes are proposed in terms of the median pier that supports the grade crossing. Just east of the grade separation at Rio Grande Boulevard N.W., the "three lane" reversible HOV/Bus lane cross section would begin.

As stated to create the reversible lane, the median would have to be reconstructed/relocated. Essentially, the existing median material would be moved 5 to 6 feet outward from the centerline to create two smaller medians between the HOV and general use lanes. Based on measurements from the information available, approximately ½ mile (2,640 feet) of 18 foot median would have to be paved over. That equates to an estimated 47,520 square feet of pavement and base material as necessary. The cost for that pavement is estimated to be in the \$600-700 thousand dollar range.

The next cost calculation covers placement of landscaped medians between the HOV/Bus lanes and the General Purpose lanes. None of the medians west of Rio Grande Boulevard N.W. grade crossing would be impacted by this proposal, only those east of the grade crossing. The costs for moving the plantings and creating new medians should be in the \$500,000 range.

Pedestrian crossings east of the grade crossing need to be located through further discussion with local citizens, however, they should be located at every major traffic generator, at each of the historic trail crossings and other locations deemed important for pedestrian movement. The costs for the plantings and creating small medians should be in the \$75,000 to \$100,000 range but would be required for any new alternative, thus are not added to the three lane HOV costs.

In addition to the costs for pavement, there would be costs for additional signalization and traffic control gates for the reversible HOV/Bus lane to direct the flow of traffic during the course of the day. We estimated that potentially 12 locations would require signalization to show the direction of flow of the HOV/Bus lane for an estimated cost of \$700,000.

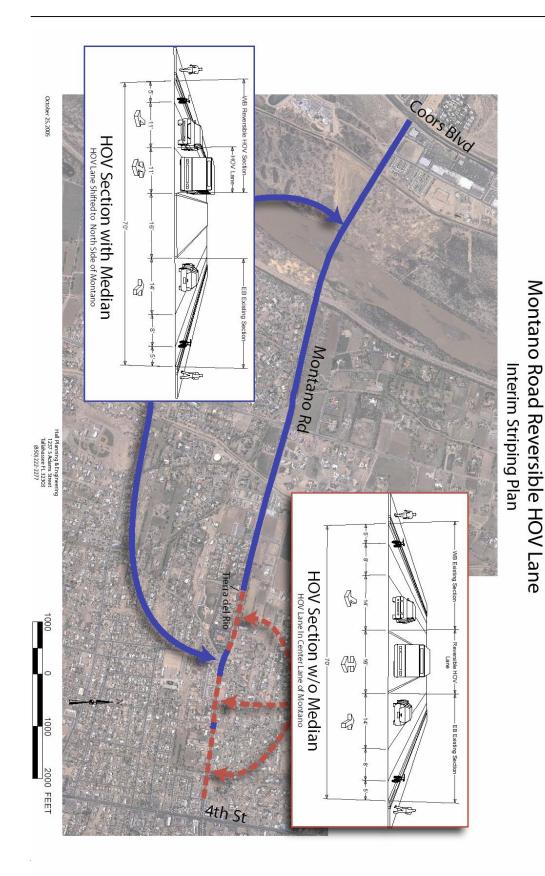
Transportation Alternatives Analysis Report Montaño Road from Coors Boulevard to 4<sup>th</sup> Street and 4<sup>th</sup> Street and Montaño Intersection

Beyond the new signals required, signing should be roughly the same as the four lane option with outside HOV/Bus lanes, so there would be no differential cost to this option.

Based on the changes identified above, we believe the differential costs for the "three lane" reversible HOV/Bus lane to be in the 1.5-1.8 million dollar range for the permanent modifications necessary for the "three lane" configuration.

### Interim Design:

Obtaining the funding for this alternative and designing and constructing such a project may take several years. Hall Planning and Engineering has developed the following interim plan to allow for the reversible third lane to be installed (at least temporarily) within a few months of its adoption as the chose alternative by the City.



### Conclusion

The proposed implementation of the reversible HOV/Bus lane with two General Use lanes, offers improved "person" capacity to the Montaño corridor while reducing the vehicle trips. This will increase the feasibility of transit, and access to the corridor by those adjacent to Montaño, and as mentioned above, will improve the balance of capacity at the signalized intersections of Coors and 4<sup>th</sup> Street.

In terms of benefit cost, the cost of implementation and operation will be greater than that of Option A due to increased signing, signals, marketing of transit, and enforcement of the HOV/Bus lanes. Compared with Option B, the cost of implementation and operation will be greater than Option B due to the addition of signals. The overall benefit will be significantly greater than Option A due to the improvements in walkability, improved balance of intersection capacity, and improved access for the adjacent property owners. The benefit over Option B is the improved walkability and improved access for the adjacent property owner.

### 4.4 No Build

Of course there is always the option of No Build. This would obviously be the least cost in that there would be no implementation or operation cost, but there would also be no benefit. The growing need for trips across the Rio Grande River will continue, and a thoughtful solution to the problem will become more difficult, as in most situations, putting off difficult problems only makes the pain more severe as symptoms become unbearable.

### Recommendation

In conclusion, our recommended alternative is the Three Lanes with reversible HOV/Bus lane. The long term benefit of an alternative that induces movement of people versus simply moving vehicles is a sound policy for the city. The three lane HOV design maintains the character of the corridor at a level much more compatible with the community goals and desires as stated by many residents from the corridor area. The four lane alternative would reduce travel time by 3 minutes and in the process, create a capacity imbalance between the roadway lanes and the existing intersection of 4<sup>th</sup> and Montaño that would eventually force major expansion of the 4<sup>th</sup> street intersection in a way that conflicts with the Coalition vision report. The Coalition effort and other studies are intent on maintaining a neighborhood feel, liveable environment and quality of life along 4<sup>th</sup> Street and Montaño that should not be ignored if Albuquerque is to demonstrate care for established neighborhoods.

Transportation Alternatives Analysis Report Montaño Road from Coors Boulevard to 4<sup>th</sup> Street and 4<sup>th</sup> Street and Montaño Intersection

# 4<sup>th</sup> & Montaño Transportation Analysis

Corridor Options Matrix

Option	Transportation Performance	Pedestrian Crossing	Side Access	Cost/Benefit
A – 4 General Purpose Lanes	Emphasizes moving cars, not people (no HOV incentive). Moves traffic through area at a moderate pace. Extensive queues at end point intersections due to capacity imbalance.	Poor ability to cross typical of a four lane roadway.	Poor left turn access. Average right turn access	Const. – Low/Low Operation - Low/Low
<b>B</b> – 4 Lane - Outside HOV/Bus Lanes	Emphasizes moving people, not cars. HOV traffic moves through the area at a higher pace. General traffic moves at a moderate pace. Improved capacity balance at end point intersections. Continued queuing at merge points.	Improved ability to cross due to increased gaps in HOV lanes	Improved ability to turn left due to increased gaps in HOV lanes. Improved ability to turn right due to increased gaps in HOV lanes.	Const Medium/Medium Operation - Medium/Medium
E – 3 Lane w/Reversible HOV/Bus	Emphasizes moving people, not cars. HOV traffic moves through the area at a higher pace. General traffic moves at a moderate pace. Better capacity balance at end point intersections. Continued queuing at merge points.	Better opportunity to cross due to reduction in cross section width/number of lanes. Pedestrian refuge islands (2) allow pedestrian to cross a single lane at a time	Poor due to heavy volumes in general use lanes. Average right turn access	Const Medium/High Operation – Medium/High
No build	Emphasizes moving cars, not people (no HOV incentive). Queues entering the corridor.	Best opportunity to cross due to smallest cross section	Poor due to heavy volumes	Const None Operation – None/None

Roundabouts would improve transportation performance, pedestrian crossing, side access, and cost/benefit for all options.

### **APPENDIX A**

### **WALKABILITY INDEX**

### WALKABILITY INDEX DESIGN

For the Montaño Road Corridor and Intersection of Montaño & 4<sup>th</sup> Street Study, assessing the walkability of study area streets was essential to the preparation of conceptual walkable street designs that will serve to maximize the area's total mobility function. Basic to this effort was identifying and analyzing walkability index data for both existing and proposed conditions.

For this walkability analysis, eleven walkability criteria were selected to indicate walkable environment quality, as follows:

### 1. Posted Speed

Vehicle speed is important to pedestrian safety and comfort. According to pedestrian studies:

The chance that a pedestrian will survive an accident with a motor vehicle is:

- 95% in a 20 mph crash
- 60% in a 30 mph crash
- 10% in a 40 mph crash

The likelihood a motorist will stop for a pedestrian is:

- 20 mph or less Will likely stop
- 25 30 mph Somewhat inclined to stop
- 35 45 mph Not likely to stop
- Over 45 mph Will rarely stop

### Walkability Measure

The measure of posted speed is:

≤ 15 mph 20 mph 25 mph 30 mph

Over 30 mph

### 2. Non-Peak Hour Free Flow Speed

Posted speed and actual vehicle speed can vary. Non-peak hour free flow speed is actual speed, measured with a speed gun or other device, during a period of moderate to high pedestrian activity that is taken during a period other than the AM, noon, or PM peak hours.

### Walkability Measure

The measure of posted speed is:

≤ 15 mph 20 mph 25 mph 30 mph Over 30 mph

### 3. Pavement Width at Pedestrian Crossing

According to pedestrian studies, most pedestrians walk at approximately 4.0 feet/second; elderly persons walk at 3.0 feet/second. The narrower the paved street surface, the less time a pedestrian is exposed to vehicular traffic and uncomfortable asphalt. Pedestrians can easily negotiate a two-lane, low speed roadway. Multi-lane roadways can become problematic to cross.

### Walkability Measure

The measure for pedestrian crossing width—measure from curb face to curb face—is:

30' or less 31' or 40' 41' – 50' 51' – 60' Over 60'

### 4. Street Width to Building Height Ratio (Street Enclosure)

To provide a comfortable environment for pedestrians, the ratio of street width (**measured from building face** to **building face**) to building height should provide a feeling of "enclosure". Building height can be estimated utilizing 10' per floor.

### Walkability Measure

Street to building height ratios are.

1.7:1 or less 1.8:1 to 2.5:1 2.6:1 to 3.5:1 Over 3.5:1

### 5. Presence of On-Street Parking

On-street parking (either parallel or angle parking) is important, not only to help distribute the parking load, but also to control traffic speed. The measure here is not only the presence of striped parking spaces, but of **occupied** parking spaces.

### Walkability Measure

The measure for on-street parking presence is **occupied** parking spaces on:

76% - 100% of the block face 51% - 75% of the block face 26% - 50% of the block face 10% - 25% of the block face No on-street parking

### 6. Sidewalk Width

To function properly, sidewalks should be sized to accommodate the walking environment. For example, in an urban core, urban center or general urban transect zone, sidewalks should typically be at least 8 feet wide—often greater width is desirable. In a low density residential environment, a 4 foot wide sidewalk might be sufficient.

### Walkability Measure

The measure for sidewalk width is:

10' or more 8' to 9' 11" 5' to 7' 11" Less than 5' No sidewalk

### 7. Pedestrian Connectivity

A high-quality pedestrian network provides ease of walking and access through short (300' – 400') blocks and/or mid-block pedestrian alleys.

### Walkability Measure

The measure for pedestrian connectivity is distance between intersections or cross-block passages:

300' or less 301' to 400' 401' to 500' 501' to 600' Over 600'

### 8. Presence and Quality of Pedestrian Features

A pleasant walking environment is basic to high walkability. Qualitative measures include sidewalk character (even, well-maintained surface; lack of obstacles, ADA compliant design

features), street furniture (benches, water fountains, lighting), and shade (via street trees or canopies).

### Walkability Measure

The measure for presence and quality of pedestrian facilities is:

High quality (High presence of the qualitative measures)

Moderate quality (Qualitative measures are present, but not to a large extent)

Low quality (Some, but not many, of the qualitative measures are present)

Poor quality or no features

### 9. Land Use Mix

People are most likely to walk when there is a specific and easily accessible place to go. The land use mix criterion utilizes the mix of different kinds of land uses on a block face, such as retail, eating and drinking, hotel, and residential land uses.

### Walkability Measure

The measure for land use mix is the number of mixed uses per block face:

- 4 or more land uses
- 2 3 land uses
- 1 land use
- 0 mixed land uses

### 10. Transit Features

A very walkable pedestrian environment is supportive of transit, when adequate transit features are available.

### Walkability Measure

**High quality transit features** (Headways of less than 10 minutes, shaded and dry bus stops, trees along the street leading to the stop, vertical curb at the stop, setback of the stop from the street edge, continuous sidewalk leading to the stop)

**Moderate quality** (Headways of 10 minutes to 30 minutes, Qualitative features—such as a loading pad, but not necessarily a bench or shelter—are present, but not to a large extent)

**Basic transit features** (Headways of 30 minutes or more). Only minimal facilities—such as a bus stop sign—are present)

No transit service

### 11. Bicycle Features

Bicycle features assure another non-automotive component of mobility is satisfied. A high-quality bicycle environment will provide for safe travel via slow traffic speeds (20 mph or less) and/or dedicated bicycle lanes or paths, and bicycle racks or lockers at strategic locations.

### Walkability Measure

**High quality** (Slow traffic speeds or separate bicycle lanes/paths, bicycle racks/lockers every one-half block)

**Moderate quality** (Bicycle lane/path only)

**Low quality** (No bicycle lane/path; posted speed ≥20 mph)

### Walkability Index Application

Specific study area locations were analyzed for walkability as follows:

- 1. A walking field survey was conducted utilizing the "walkability index data sheet" (see Appendix A). Each of the 11 walkability measures were noted (where % applicability is called for, an on-the-scene estimate was made).
- 2. A total score for each street segment was calculated and the result was correlated with walkability:

• 90 – 110 points High walkability

• 65 – 89 points Moderate walkability

• 44 – 64 points Walkable

43 points or less Unfriendly to walking

### WALKABILITY INDEX RESULTS

HPE applied the walkability index to 4<sup>th</sup> Street at its intersection with Montaño Road (see following index data sheets). For all four quadrants of the intersection, index scores ranged from a low of "16" east of Montaño Road, to a high of "28" west of Montaño Road. That means, at present, the intersection is "unfriendly to walking" and pedestrian friendly measures should be implemented.

	Street Segment	Montano	<b>i i i</b>	
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attowny	South of Wontano		4 ∯ ®	
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		Bern/		Sanchez
n=		Delly		artoriez
	Possible Score	Scora Sida A	Score Side B	Score A + B
Weasure	rossible Score	Score Side A	Score Side D	Score A + B
e for Side A only)				
			<b></b>	0
25 mph	6			0
30 mph	4			0
Over 30 mpn	U	0	Segment Total	0
		by stop signal or	other slowing/stop	
				0
				0
30 mph	4			0
Over 30 mph	0	0	Seament Total	0
			Segment rotal	U
		ide A only)		
	10 8			0
31' to 50'	6			0
51' to 60'	4	4		4
Over 60'	0	L	Segment Total	0 4
			oegment rotal	
eet Parking (Parallel or Angle Parking)	_			
				0
26% - 50% of Block Face	3			0
10% - 25% of Block Face	2			0
No on-street parking	0	0		0
			Segment rotal	
		t (at least 8' - 10' ii	a central business	
				0
5' to 7' 11"	3			0
Less than 5'	2	2	2	4
No sidewalk	0		Segment Total	0
			ocginent rotal	
		ages		
			1	0 4
401' to 500'	3		,	0
501' to 600'	2	2		2
Over 600'	0		Seament Total	0
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				0
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High quality	5			0
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ence of different land uses, such as ret	tail, eating and drint	king establishment	s, hotels and reside	ential units
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2 - 3	3	3	3	6
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		2	2	4 0
INO HAIISIL SEIVICE	U		Segment Total	4
			<i>5</i> 7	
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			Segment Total	0
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	Measure  If or Side A only)  Storm ph 20 mph 25 mph 30 mph Over 30 mph Over 30 mph  Flow Speed (Score for Side A only): Vi Storm ph 20 mph 25 mph 30 mph Over 30 mph Over 30 mph  Urb face to curb face—at Pedestrian Cr 30' or less 31' - 40' 31' to 50' 51' to 60' Over 60'  Set Parking (Parallel or Angle Parking) 76% - 100% of Block Face 26% - 50% of Block Face 26% - 50% of Block Face 10% - 25% of Block Face No on-street parking Storm ph Storm	RE	RE	Berry   Second   Se

### Transportation Alternatives Analysis Report Montaño Road from Coors Boulevard to 4<sup>th</sup> Street and 4<sup>th</sup> Street and Montaño Intersection

City of Albuquerque, New Mexico  Date: 8/2/2005		Street Segment:	Gene Avenue	5 F	
Date: 6/2/2005		North of Montano		Ath Street	
Completed by: Billy Hattaway		-		Side A Side B	
					100 ph.s.
WALKABILITY MEASURE Criterion	Measure	Possible Score	Montano Score Side A	Score Side B	Score A + B
1 Posted Speed (Score for Sid	≤15 mph	10			0
	20 mph 25 mph	8 6			0
35 mph	30 mph Over 30 mph	4	0		0
33 mpn	Over 50 mpm	0		Segment Total	0
2 Non-peak hour Free Flow S	peed (Score for Side A only): Ve	hicles not hindered	I by stop signal or	other slowing/stopp	ing vehicles
*	≤15 mph	10			0
	20 mph 25 mph	8 6			0
Not measured	30 mph	4	0		0
NOT Hiedsufed	Over 30 mph	U		Segment Total	0
3 Pavement Widthcurb face	e to curb faceat Pedestrian Cre	ossing (Score for Si	ide A only)		
	30' or less 31' - 40'	10 8			0
	31' to 50'	6			0
	51' to 60' Over 60'	4 0	4	<del>                                     </del>	4 0
	Q461 00	U		Segment Total	4
4 Presence of On-Street Park	ing (Parallel or Angle Parking)			000000	
	76% - 100% of Block Face 51% - 75% of Block Face	5 4			0
	26% - 50% of Block Face	3			0
No on-street parking	10% - 25% of Block Face No on-street parking	2	0		0
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5 Sidewalk Width: Sidewalk v	vidth should be appropriate to t	ne built environmen	<u>ıt (at least</u> 8' - 10' ir	a central business	district)
	10' or more 8' to 9' 11"	5 4			0
	5' to 7' 11"	3			0
Varies up to 6'+	Less than 5' No sidewalk	2	2	2	4
	else Adin	**		Segment Total	4
6 Pedestrian Connectivity: D	stance between intersections o		iges		
•	300' or less 301' to 400'	5 4			0
	401' to 500'	3			0
	501' to 600' Over 600'	2	2	2	4 0
		-		Segment Total	4
7 Street Widthmeasured from	om building face to building face		nt Ratio (Score for	Side A Only)	
	1.7:1 or less 1.8:1 to 2.5:1	10 8			0
	2.6:1 to 3.5:1	6			0
	Over 3.5:1	0	0	0	0
0 Descent	destrict feet				•
8 Presence and quality of pe	High quality	5			0
	Moderate quality  Low quality	3 2	2	2	0 4
	Poor quality or no features	0			0
				Segment Total	4
9 Land Use Mix: Presence of	different land uses, such as ret		ing establishment	s, hotels and reside	
	4 or more 2 - 3	5 3	3	3	6
	1	2			0
	0	0		Segment Total	0 6
10 Transit Features					
. Transit reatures	High quality	5			0
	Moderate quality Basic transit features	3 2	2	2	0
	No transit service	0			0
				Segment Total	4
11 Bicycle Features	High avalled	-			0
	High quality Moderate quality	5 3			0
	Low quality	0	0	0 Segment Total	0
				Segment rotal	U
Walkability Scoring		TOTAL	SCORE THIS ST	REET SEGMENT	26
90 - 110 points High Walkabil		TOTAL		OLOMENI	20
65 - 89 points Moderately W	alkable				
44 - 64 points Walkable					

ate: 8/2/2005		Street Segment:		A Montano	
ompleted by: Billy Hattaway		West of 4th Street		Side A Moi	Side B
				ଅଁ	Ĭ
ALKABILITY MEASURE					Sanchez Rd
Criterion	Measure	Possible Score	Score Side A	Score Side B	Score A + B
1 Posted Speed (Score for Side					
	≤15 mph 20 mph	10 8			0
	25 mph	6			0
35 mph	30 mph Over 30 mph	4	0		0
99 mpm				Segment To	
2 Non-peak hour Free Flow Sp	eed (Score for Side A only): Ve	ehicles not hindere	d by stop signal or c	ther slowing/st	opping vehicles
	≤15 mph	10			0
	20 mph 25 mph	8			0
Management	30 mph	4	0		0
Not measured	Over 30 mph	0	0	Segment To	0 tal 0
3 Payament Width curb face	to curb faceat Pedestrian Cr	assina (Scare for S	Side A only)		
o r-avement widthcarb face	30' or less	10	I I		0
	31' - 40' 31' to 50'	8 6		77102-26	0
	51' to 60'	4	4		4
	Over 60'	0		Segment To	tal 4
				Segment 10	4
4 Presence of On-Street Parki	ng (Parallel or Angle Parking) 76% - 100% of Block Face	5			0
	51% - 75% of Block Face	4			0
	26% - 50% of Block Face 10% - 25% of Block Face	3 2			0
No on-street parking	No on-street parking	0	0	0	0
				Segment To	tal 0
5 Sidewalk Width: Sidewalk w	idth should be appropriate to t	he built environme	nt (at least 8' - 10' in	a central busin	ess district)
	10' or more 8' to 9' 11"	5 4			0
	5' to 7' 11"	3	3	3	6
	Less than 5' No sidewalk	2			0
	NO SIGEWAIK	Ü		Segment To	
6 Pedestrian Connectivity: Dis	stance between intersections of	er cross-block pass	ages		
5 1 0 d 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	300' or less	5			0
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	501' to 600'	2			0
	Over 600'	0	0	Segment To	otal 4
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/ Street Widthmeasured fro	m building face to building fac 1.7:1 or less	eto Building Heig 10	Int Ratio (Score for S	side A Only)	0
	1.8:1 to 2.5:1	8			0
	2.6:1 to 3.5:1 Over 3.5:1	6 0	0	0	0
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8 Presence and quality of ped			<u>u</u>		
	High quality Moderate quality	5			0
	Moderate quality  Low quality	2	2	2	0 4
	Poor quality or no features	0			/ 0
				Segment To	
9 Land Use Mix: Presence of	different land uses, such as re		king establishments	, hotels and res	
	4 or more 2 - 3	5 3			0
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10 Transit Fasture					
10 Transit Features	High quality	5	22 22 22 22 22 22 22 22 22 22 22 22 22		0
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	Basic transit features No transit service	2	0	0	0
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11 Bicycle Features					
Dioyoto i datareo	High quality	5			0
	Moderate quality  Low quality	3	3	3	6
	Low quality	J		Segment To	
Valkability Scoring		TOTAL	SCORE, THIS ST	REET SEGME	NT 28
0 - 110 points High Walkabilit 5 - 89 points Moderately Wa 4 - 64 points Walkable					3

te: 8/2/2005		Street Segment:	No Street w/in range	٩ ا	
de. 6/2/2003		East of 4th Street		Montano	
mpleted by: Billy Hattaw	ау	_	4 4 7 0	m ğ m	
Tel telp		_	Ü	Si spi	
				Į.	
			4th Street		
ALKABILITY MEASURE	* · ·				
Criterion	Measure	Possible Score	Score Side A	Score Side B	Score A + B
1 Posted Speed (Score for		2.14			
	≤15 mph 20 mph	10 8			0
	25 mph	6			0
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oo mpii				Segment Total	0
2 Non noak hour Free Flow	v Speed (Score for Side A only): Ve	shicles not hindere	d by stop signal or ot	ner elowing/eton	ning vehicles
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	20 mph 25 mph	8 6			0
	30 mph	4			0
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3 Pavement Widthcurb f	ace to curb faceat Pedestrian Cr 30' or less	ossing (Score for S	side A only)		0
	31' - 40'	8			0
	31' to 50' 51' to 60'	6 4			0
	Over 60'	0	0		0
				Segment Total	0
4 Presence of On-Street P	arking (Parallel or Angle Parking)				
	76% - 100% of Block Face 51% - 75% of Block Face	5 4			0
	26% - 50% of Block Face	3			0
No an atreat parking	10% - 25% of Block Face No on-street parking	2	0	0	0
No on-street parking	No on-street parking	U	0	Segment Total	0
5 Sidewalk Width: Sidewal	k width should be appropriate to t 10' or more	5	nt (at least 8' - 10' in a	central business	0
	8' to 9' 11" 5' to 7' 11"	4	3	3	0
Varies up to 6'+	Less than 5'	2		3	0
	No sidewalk	0		Segment Total	0
				3	
6 Pedestrian Connectivity	: Distance between intersections o 300' or less	r cross-block pass 5	ages		0
	301' to 400'	4			0
	401' to 500' 501' to 600'	3 2			0
	Over 600'	0	0	0 Segment Total	0
				Segment Total	. 0
7 Street Widthmeasured	from building face to building face 1.7:1 or less	eto Building Heig 10	ht Ratio (Score for Si	de A Only)	0
	1.8:1 to 2.5:1	8			0
	2.6:1 to 3.5:1 Over 3.5:1	6 0	0	0	0
	Over 5.5.1	ō	0	0	0
8 Presence and quality of	nedestrian features				
o rieselice and quality of	High quality	5			0
	Moderate quality Low quality	3 2	2	2	0 4
	Poor quality or no features	0			0
				Segment Total	4
9 Land Use Mix: Presence	of different land uses, such as ret	ail, eating and drin	king establishments,	hotels and reside	ential units
	4 or more 2 - 3	5 3			0
	1	2	2	0	2
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10 Transit Features	High acalla.	-			0
	High quality Moderate quality	5			0
	Basic transit features	2	2	2	4
	No transit service	0		Segment Total	0 4
44 85					
11 Bicycle Features	High quality	5			0
	Moderate quality	3			0
	Low quality	0	0	0 Segment Total	0
				3	

### **APPENDIX B**

# HARD COPIES OF THE COUNCIL OF GOVERNMENTS REPORT ARE AVAILABLE AT THE OFFICE OF COUNCIL SERVICES

### **APPENDIX C**

### **COALITION REPORT**

A PDF OF THE NORTH FOURTH STREET COALITION REPORT IS AVAILABLE UNDER THE HOT TOPICS CATEGORY ON THE CITY COUNCIL HOME PAGE

### APPENDIX E

### **PUBLIC MEETING NOTES**

September 23, 2005

**SUBJECT: Montano Corridor Roadway Study Public Meeting Notes.** 

Attached are copies of partial notes of the public meetings for the Montano Corridor Study. Included are written comments provided by members of the audience. The documents are not a complete official record of the meeting. The purpose of these notes, as was the purpose of the meeting as stated on both meeting agendas, is to provide input from the public to the consultants working on this study, Hall Engineering and Wilson and Company. The notes include the presentations by the City, the consultants, and the comments, questions and suggestions from the public. The tapes of the meetings are on file at the City Council Office. If you are interested in listening to the tapes, contact the Sandy Chavez at the City Council Office at 768-3147.

If you have questions or require further information please contact Tom Menicucci, City Council Office at 768-3126 or tmenicucci@cabq.gov.

Thank you,

Tom Menicucci
Policy Analyst II
cc: Debbie O'Malley, City Councilor, District 2
Michael Cadigan, City Councilor, District 5
Laura J. Mason, Director, Council Services Department
Louis J. Colombo, Deputy Director, Council Services Department

### Montano Corridor & 4th Street

### Written Comments

August 9, 2005

### Ana H. Assink, 5919 Tirerra Viva Pl. NW

I strongly feel that safe pedestrian crossings at the three-four ditch crossings over Montano between Coors and 4th are needed. Reasonable access to Montano for residents along Montano is also needed, whether onto Montano or by opening up access to other neighborhood roads.

I appreciate the Hall Study and its consideration of existing valley pedestrian, bicycle and land use in its analysis.

The current bike lanes on Montano have tree branches at the head/shoulder level of bicyclists. This isn't a problem with the current shoulder but will be with new additional lanes.

### Steve Ranieri, 505 Sandia Rd. NW, 87107

We need a better comprehensive plan of development for all of the city. Need to slow down traffic on Montano under any plan that would increase the volume of traffic. Need safer access out on to Montano, need public transportation what about walkways over Montano and 4th for pedestrians?

### Carol Amino, 500 Gorry Ct. NW

Mr. Hall has done a thoughtful in depth look at Montano with wonderful solutions. The three-lane HOV idea seems the best solution. How about a pedestrian and Bicycle over pass at the Harwood Drainage? Your idea about decreasing speed so vehicles can see pedestrians need to be addressed no matter how many lanes the City decides on.

### Carlota Lamadrid, 301 Placitas Rd. NW

The Hall presentation was in depth and very informative in contrast to the Wilson presentation. I agree with Rick Hall that the less expensive proposal of the allowing four lanes on Montano will be the wrong one...it is not a long term solution.

### John D. Teel, 1313 Van Cleave Rd. NW, 87107

Have you considered that more than average amounts of homes/lots are zoned residential not commercial?

### Christine Sierra. 5500 Villa Canela Ct. NW

Wilson & Co. maintained that Option A is the best alternative for moving traffic. This disregards the value of encouraging car-pooling with its multiple benefits (environment, conservations, etc.) Moreover, the Hall presentation shredded the Wilson conclusion with sound analysis and empirical evidence.

Kudos to Hall & Associates very instructive and compelling presentation. Let's listen to him! I loved the vision for quality of life improvements on 4th Street and his analysis of required lane changes to 4th. Excellent work....City Council got its money's worth.

### Tora Indritz, 524 Griegos Rd. NW, 87107

If Montano is going to be four lanes, there needs to be a traffic light at the access/entrance to Anderson Field.

Anderson Field is an important and much-used public open space. For those who live south of Montano to access Andersen, we must cross two busy lanes of traffic now. If Montano is four lanes it will be impossible to cross Montano safely without a light.

### Mike Bustamente/Cheryl Hall, 5909 Tierra Viva Pl. NW

Why not include areas east of 4th Street and West of Coors in the study? What provision is to be made for access (traffic) for non-signal intersections? Access from my street at peak hours when I need it is very difficult now. It can only get worse.

### Ana Marie Sekula, 836 Los Poblanos Ranch NW, 87107

Can the bridge carry the weight of cars for four lanes?

How can people who live in homes on or off Montano get into Montano with four lanes? I suggest that the Army Core of Engineers hold a public hearing on the issue of the City of Albuquerque's.....to stripe Montano to four lanes.

I suggest more traffic lights on Montano....slow the traffic on Montano.

### Tonya Lantrip, 619 Candelaria NW, 87107

Rick Hall is on target! In order to make this city great, his ideas & experience needs to be taken seriously. Is plan incorporates all types of transportation. Encouraging creative and shared transportation is a must. It would be great to be able to get around the city on a bus with ease. It will be a very proactive approach as cost of gas increases. Great cities are walkable and pedestrian friendly. We could be a model for other cities n this nation. We need long term thinking, not cheep, fast solutions.

### **Montano Corridor**

### **Written Comments**

August 30, 2005

### Deanna L. Nichols, 819 Tyler Rd. NW, 87107

Whatever the decision is about land number and type, I am highly concerned that the walkability and bikeability be factored into the plan. The mid-road crossing light I believe will become absolutely necessary to allow pedestrians and bicyclists to cross Montano from the Griegos ditch and the Harwood lateral. There needs to be crosswalks, pedestrian crossing signs, and a traffic signal...whether the transitional are activated by a button, or a sensor. I really like this idea. With out this, and with any increase in driving lanes, crossing will become not just difficult, but dangerous, right now it is just difficult.

### Jean and Jim Genasci, 6147 Tallsman Drive NW, 87120

There is a need for bus service from Unser to Tramway which connect with thirteen existing north/south routes making the city readily available.

Questions: It was stated that delays during "phases" (lights) transit times..et.al. were studied in "real time" i.e. "today"

What do the studies show for these traffic factors when 7,000 plus homes are built on the mesa with 10,000 more cars?

### Jennifer Sena, 7605 Briar Ridge NW, 87114

I appreciate the ability to attend this meeting and see the various options and hearing the issues. I live in the Westside because I wanted to purchase the most house for my money, I am not sour why the rest of Albuquerque wants to punish me for making a economical decision, and not allow road development.

With that said, today it took me a full hour to get to work from Ventana Ranch to University Hospital, with one, five minute stop to drop off my child at a daycare on 4th and Delmar. I can't understand the cost of some of the options offered (roundabouts and center HOV). If I were voting, I would support the HOV/Bus lanes Option B. Anything you could do to solve this matter would be appreciated.

### Jolene Wolfley, 6804 Staghorn NW, 87120

I support either of the Bus/HOV alternatives. Analysis does not rate the recreational value, quality of life value, and land use implications of the alternatives. This is one of the most scenic areas of Albuquerque. The analysis should account for that in your "issues" section and "evaluation matrix".

I use the bridge as a pedestrian, bicyclist and roller blader. The increased volume of traffic, lane nearer to pedestrian paths, pollution detract from recreational use. Westsiders must cross bridge to access main Bosque trails.

Won't change in land uses have as much impact on travel capacity as the increase to four general purpose lanes? Much more development is to occur at Montano and Winterhaven. This intersection will likely be signalized in the future. 4th and Montano may also be developed with higher trip generating uses. Land developments could quickly wipe out any gains from four general purpose lanes. So congestion will always be here, maybe we should focus on preserving the rural ambience which can never be regained.

Travel speeds will be key to maintaining the friendliness to bikers, walkers along Montano. Less than 35 MPH should be pursued.

### Carol Heald, 3200 Malecan NW

Might it be advisable to re-stripe hour glass style – four lanes to two over the river itself, use the roundabouts idea, and absorb cars from Coors and Montano.

### Seymore Hersh, 6924 Sweetbriar NW, 87120

Regular/standard four lanes sounds like the easiest to implement, lowest cost, easiest to drive. We can later, if we want, implement a more complex system.

### Carol Armijo, 500 Gorry Ct. NW, 87107

It's very clear that Wilson sees the four lane vision only and is defensive about any other openended ideas. They think going fast in four lanes down Montano is all that's needed to get the Westside people to the east. I want to know the negative impact it will make so that the "real

life" happens and everyone sees that Rick Hall's method is a more human, peaceful and longrange plan needed for Albuquerque. The intersection at 4th and Montano needs to addresses first.

### Carlota Lamadrid, 301 Placitas Rd. NW

Wilson and Co. clearly minimizes the problems residents on Montano will experience if four lanes are striped. Getting out on Montano will become more hazardous by losing the shoulder. More traffic on Montano will make it more dangerous for people on bikes and pedestrians. The rural feel will disappear. The area will become unfriendly to walkers and bikers when traffic increases.

We need to seek long range plans which look carefully at "flow balance". We need to first improve the 4th and Montano and 2nd and Montano intersections. Roundabouts need to considered with any plan.

### Judy Ruter, 3817 Don Juan Ct. NW

Unless overall Westside development is addresses, increasing traffic on Montano with four lanes just contributes to a larger problem in the future. I can't believe the issue of the intersections was glossed over – along with other traffic studies that would impact this corridor. I have sympathy for westsiders – this four lane – is not going to help. It is clear that Mr. Hall is the only independent player and the one with vision about quality of life and addressing larger issues.

### State Senator Dede Felman, 1821 Meadowview NW. 87104

Please specify the travel question – time saved in regular vehicles and HOV vehicles for all three alternatives.

### Anne LaLopa, P.O. Box 91604, 87199

Why isn't the flyover being presented as an option to the Westside traveler?

### Peggy Meuich, 5553 Gold Rush Drive NW. 87120-5362

My first choice Option D, second Option B. However, I'm very disappointed that all of the options will not address the mess on Montano in the am between Golf Course and Coors and will only be a very few minutes off the actual commute between Coors and 4th Street. Thanks for all you've done.

### Jackie Bouker, 414 Mission Avenue NE, 87107

Safe access onto and across Montano needs to be more adequately addressed. Particularly the issues of left-had turns onto Montano and pedestrians crossing of the street. There are two City Open Space parcels with access problems. Equestrians use these Open Space areas and currently cannot make left-hand turns safely. Gaps in traffic do not usually occur simultaneously east and west bound. The median is not large enough to accommodate truck and trailer traveling half-way across the street to wait for another gap in traffic to complete the turn. Also, medians are not safe haven for more than one or two pedestrians or for equestrians to wait for sufficient gaps in traffic in order to cross the road. Traffic must stop at these access points and at trail crossings.

Your key criteria listed that existing recreational trail shall not be negatively affected. Let's accommodate the people using this trail. Thank you.

Sanford Abrams, 5731 Guadalupe Trail NW (via e-mail)

In last's night debate the word safety occured repeatedly. The two issues concerning the city's proposal to increase the traffic on Montano Road by restriping to four lanes disregards both - safety and congestion. The Council of Governments says restriping will increase congestion and lengthen the time to work for north valley and west side residents, and the city engineer said, at the public information hearing on August 30, that it might save one or two minutes. Furthermore, without preparing the intersecting roads to accept the increase in traffic and making a high occupancy vehicle swing lane, Montano will be one long parking lot.

More important than a two minute convenience for commuters is the fact that there are three churches and a nursery school in the stretch of road under consideration which have children delivered and picked up by parents during rush hours which is already, with only two lanes and no stoplights, considered an extremely dangerous situation. In addition, to create four lanes the buffer lanes for bike riders will be removed creating a more hazardous situation.

Dennis Potter (north valley resident0 (via email)

I sort of prefer the alternative w/ the 'outside HOV lanes' but I'm very concerned about the closeness of the traffic lane to the bike lane, an extra buffer space or a separate/isolated lane is essential. I left a video w/ Diana Trujeque for you to see how well Alb. drivers respect Bike Lanes. (I have another if it can't be found.) The sidewalk on the south side of the Montano bridge is too narrow (and quite unsafe) for any more than the lightest 2-way pedestrian, dog, baby stroller, roller blade and cycling traffic. The study presentation team gave, at most, a 1 to 2 minute time savings from Coors to 4th St. it already takes 15/20 minutes just to go 3 blocks on Montano from T.R. Drive. to the west side of Coors, not even getting across Coors or counting the time to 4th St., another 15/20 minutes. A 1+ minute savings is functionally and statistically insignificant. Should it be done anyway? To allow a 'reasonable' commute time for existing traffic would probably take 20 more lanes across the river, 1 lane is effectively meaningless. Paving over the bosque is not a realistic or desirable solution. There is no 1 solution, it's many small pieces of a much larger puzzle without improvements on the north / south Blvds. (4th, 2nd, Edith) and additional lanes (3 each way) on Montano from 4th to I-25, and redesign Montano/I-25 into a flyover interchange w/out traffic signals, if the only change is an added lane from Coors to 4th it will just give more cars a place to wait stuck in traffic need better/more east-west access from 4th, 2nd, Edith to I-25 additional westside changes are needed just for existing traffic Paseo @ I-25 and also @ Jefferson, flyover type interchanges, too much restriction from traffic signals, need 3 southbound lanes on Unser, Montano to I-40 especially morning rush hour, traffic load from Ventana Ranch area is rapidly increasing. w/ double southbound to eastbound entrance ramp onto I-40 connect Unser thru Paradise Hills to I-40, to help reduce traffic on Golf Course (into Taylor Ranch then onto eastbound Montano) traffic flow improvements on Alameda, more lanes, 2 isn't enough, especially from 4th up to I-25. There are multiple, large new residential developments going in near Ventana Ranch, not to mention Rio Rancho, morning traffic is already rapidly approaching gridlock. As the new areas are completed and occupied, the traffic problems will become totally intolerable. Part of the solution to more roads (that we haven't got) a sincere realistic effort at reducing the need for people to use single occupant vehicles more bus routes, (and more buses running more often) East/West bus routes on all river crossings north of Central, it currently takes 2+ hrs (one way) to get from the Westside to the Heights by bus. If the solution isn't more convenient than driving, people won't use it. What's needed? HOV lanes (w/ enforcement) and REAL incentives for car-pooling. (preferred/discounted downtown parking, ) HOV/Bus lanes on Alameda, Montano, I-40, and everywhere else it's congested. community wide education about, and incentives for bicycling.

Transportation Alternatives Analysis Report Montaño Road from Coors Boulevard to 4<sup>th</sup> Street and 4<sup>th</sup> Street and Montaño Intersection

Builders/construction incentives for better and more 'mixed use' developments so people can live/work closer and not need to commute by car, 'rush hour' adjustments to traffic signal timing to accommodate the direction of heaviest traffic flow, redesign ALL boulevard intersections at freeways to eliminate or reduce traffic signals (and their subsequent congestion). If many smaller acceptable solutions can be successfully applied toward the traffic problem it can have as much effect as a large unpopular solution.

Marcia Miolano 1744 Dietz Loop, NW

I live about 0.25 mile south of Montano. I realize that the bridge needs to accommodate traffic movement across the Rio Grande, but the traffic noise is very disruptive for the local rural community. It is the City's elective offical's and administrator's role to balance the needs of the commuters and the adjacent residents. I belive that a positive solution for all is to install noise barrier walls along Montano from 4th street to Coors Blvd. as has been done in other parts of Albuquerque (San Mateo south of I-40). Thank you for listening to the concerns of a concerned citizen.