

**CITY OF ALBUQUERQUE
CITY WIDE-ON CALL ENGINEERING SERVICES
(TRANSPORTATION & STORM DRAINAGE)
5015.00, TASK 4**

**RIO GRANDE BOULEVARD AND CANDELARIA ROAD
INTERSECTION REASSESSMENT**
COMMENTS AND RESPONSES SUMMARY

Supplement to:
Rio Grande Boulevard and Candelaria Road Intersection Evaluation
November 2008

Prepared For:



Prepared By:

**PARSONS
BRINCKERHOFF**

November 7, 2013



Introduction

The information in this document supplements the *Rio Grande Boulevard and Candelaria Road Intersection Reassessment* report released by the City of Albuquerque on July 29, 2013. The supplement includes public comments received on the reassessment report and responses to comments prepared by the project team. Comments include the following sources:

- Written comments received by the City after the report was published and available to the general public in August 2013;
- Verbal comments made at a public meeting held on September 10, 2013 to present the report findings to the general public; and,
- Written comments received within the 30-day period following the public meeting.

One-hundred and fifteen (115) people signed in at the public meeting. Actual attendance was higher as some individuals did not sign-in.

A total of 95 persons submitted comments on the report and/or the intersection issue. This number includes verbal comments made at the public meeting and written/email comments received before and after the meeting. All written comments received are provided verbatim in the following pages. Verbal comments are not verbatim; rather, they are the essence of the comments as interpreted by the Project Team. The points made by speakers at the meeting were typed and projected on a large screen at the meeting. This allowed those commenting to correct the typists if their points were not adequately recorded.

The comments received included a personal opinions, comments, and questions. The opinions and comments are included in this document but do not include responses from the project team. Responses are limited to specific questions about the methodology and assumptions used for the intersection reassessment and for general questions on the analysis approach.

To protect their privacy, the names and contact information of persons who submitted comments have been omitted.



Email Comments

The following comments were received via email. The content of the emails include a range of personal opinions, comments, and questions. The opinions and comments are listed and noted but do not include responses from the project team. Responses are limited to questions.

The emails are included in their entirety and include the names, email address, and dates the email was sent. For emails where the questions are not specifically delineated by the sender, the questions have been highlighted in red.

From:
Date: Fri 8/30/2013 2:49 PM
Subject: comment on roundabout

I am unable to attend the Sept. 10th meeting due to being out of the country. I am disappointed that these meetings were not held after the upcoming election as the timing makes the discussion simply a political rally of sorts. The damage done to the North Valley community is unmeasurable and fueling conflict is certainly not in the community interest.

At this point I would ask if the roundabout is not built what can be done to save the federal money that was allocated to the project? This money could provide needed Albuquerque jobs and if not spent here will simply go to another community. **Can existing roundabout plans be reworked to accommodate opposing viewpoints? Can compromise be the goal?** I would be willing to join any group that pursues that solution.

, 765-1444

RESPONSE:

- 1. Because the federal funds were specific to safety improvements at the Rio Grande/Candelaria intersection and were received through the NMDOT Highway Safety Improvement Program, the funds would return to the State if they were not used for the construction of a roundabout at the specified intersection.*
- 2. The basic design of roundabout intersections and signalized intersections are very different. Consequently, the opportunity for a compromise solution in the intersection design is not practical. However, other strategies may be available to achieve the desired safety objectives if the project extended beyond the intersection. The current effort was limited to the intersection and was not intended to look at broader corridor issues.*

From:
Date: Tue 9/3/2013 12:32 PM
Subject: Invitation for comments

Dear Mr. Pennington,

In response to the invitation for comments about the Rio Grande/Candelaria Intersection Reassessment **I would like the planners to consider the everyday incidents that are unaccounted for among the**



many statistical compilations that have been interpreted (some subjectively) in the course of this heated debate.

I, for one, was within inches of being severely injured or killed when attempting to turn left (north) off Candelaria onto Rio Grande Boulevard at noon one day last year. A woman talking on a cellphone driving south on Rio Grande came through the red light and screeched to a stop about six inches from broadsiding my vehicle. Unless I want to go out of my way via Glenwood and Campbell to Rio Grande I am obligated to use that intersection by virtue of the location of my residence.

I'm certain my personal experience is not unique. There must be many near fatal incidents that have no representation in the statistics available.

Veranda Road NW

RESPONSE:

Because there is not a good method of quantifying near crashes, the industry standard for evaluating intersection safety is based on reported crashes. This provides a quantifiable metric to compare the statistics at Rio Grande/Candelaria with the statistics for crashes at other, similar city intersections.

From:

Date: Tue 9/3/2013 4:00 PM

Subject: Rio Grande Candelaria intersection

Many would like answers to the following regarding the Rio Grande/Candelaria intersection and road assessment:

- 1. How was the radar speed evaluation achieved? (i.e., did drivers see a police vehicle or speed radar sign?) Please describe the physical set up on the road/ time of day/-- what was the time span of the test? What days of the week?**
- 2. How were other speed tests designed: Was there a speed warning sign ahead of the pneumatic tubes placed on the road?**

Thank you.

Candelaria Rd NW 87107

RESPONSE:

1. The radar speed evaluation was conducted in accordance with the speed study guidelines outlined in the ITE *Manual of Transportation Engineering Studies*. The speed data was collected by a technician working from a SUV parked on the shoulder of the roadway. The data were collected on a weekday in June 2013 during off-peak hours. A total of 720 samples were collected including the north, south, and east legs of the intersection. Data collection occurred throughout the day. The collection locations were 1,740 feet north of Candelaria Road, 600 feet east of Rio Grande Boulevard, and 1,740 feet south of Candelaria Road.



2. The other speed data was collected using pneumatic tubes placed across the target roadways. Pneumatic tubes are black hoses about ½” in diameter that are placed across the lanes under study. They are used to collect traffic volume, travel speed, and vehicle classification. While the tubes are noticeable to the public, they do not typically alter driver behavior. Also, because the tubes are not intrusive, no signs or other warning devices are posted while data collection is underway.

Responses to the questions in the following email were provided by the City of Albuquerque in an email response to the sender. Responses are in italics following each question.

From:

Sent: Tuesday, September 03, 2013 1:44 PM

To: riogrande@pbworld.com

Cc: Bauman, Debbie; Gallegos, Yvonne; Dolan, Diane R.

Subject: Questions regarding Sept 10 meeting

Dear Mr. Pennington,

We have received your notification regarding the public meeting scheduled for September 10 to present and discuss the findings of the Candelaria/ Rio Grande Boulevard intersection reassessment. We have the following questions:

1. The meeting is scheduled to be 1.5 hours long. This is not a great deal of time in which to cover a presentation of the report and post presentation comments/questions from the attendees. Accordingly, we wonder:

- How much time will each speaker have?
 - *Depending on how many people wish to speak we will try to give about 2 minutes for questions/comments.*
- Will you alternate pro and con speakers, as was done at the last public meeting in August 2012?
 - *We are not currently planning to do so.*
- Will you have a specific segment just for questions?
 - *The agenda does have a segment for questions and comments. Our intent is to address the questions first and then move into comments.*
- Will the total number of speakers be limited?
 - *We will try to accommodate as many people as we can who want to speak, but it will depend on the number of people who wish to speak.*
- Will there be a professional facilitator?
 - *Yes.*
- What time will sign up begin?
 - *The meeting room should be opened by 5:45 or so; based on the turnout of the last meeting, staff will be present by that time as well and people can start signing in by 5:45 if they wish. We will only have one sign-in sheet, which will include an area that can be checked if the person signing in wishes to speak; this way people won't have to wait to sign-up two different places.*

2. How will written comments and questions be handled:

- May they be submitted by email? Hand delivered?
 - *Yes, or faxed.*



- Must specific information about the questioner/commenter be provided e.g., name, email address) and the comment/question be in a specific format?
 - *As mentioned above, the sign-in sheet will have space for the attendee to put their name. address, contact information, and whether or not the person wishes to speak.*
- What is the deadline for submission of questions/comments?
 - *DMD's typical process is to take comments for an additional two weeks following a meeting.*
- By what deadline will responses to the questions/comments be received or will they be responded to at the second meeting?
 - *I think it will depend on how many comments we receive back. We will make sure that the facilitator provides more information regarding responses to questions/comments at the meeting, but our intention is to respond to the questions at the meeting.*
- 3. When and where will the second public meeting be held? Will it have the same format and structure as the first meeting?
 - *I do not know any specific information about the location and date of the second meeting.*

Because we want to make sure that our respective Neighborhood Associations are fully informed about the format and structure of the meetings, we would appreciate your responding to these questions by Thursday, September 5. 2013.

Thank you very much.

From:
Date: Sun 9/8/2013 7:48 AM
Subject: North Valley Resident Comment Re: Proposed Roundabout at Candelaria & Rio Grande

Dear Dave Pennington

Thank you for inviting public comment regarding the proposed roundabout at Candelaria and Rio Grande. Please feel free to read this email at the meeting on 9/10/13. I am writing to express my opposition to this proposal. I've been a home owner in the Los Duranes neighborhood for eleven years and I drive through that intersection on a daily basis. I understand that the main rationale for the roundabout is that it reduces speeding and accidents; however, I have yet to see a traffic accident at this intersection. I understand that a study been conducted to see if this as a high accident intersection. **If so how does this intersection compare to other high accident points along Rio Grande?** For example, I have witnessed dozens of accidents at the intersection of the exit for the I-40 and Rio Grande. Much of this is caused by exiting northbound cars turning on red. There's currently one sign that is not seen by most drivers until they are at the intersection. **Could we instead spend the funding**



to place several more signs on the exit ramp and a more noticeable sign for drivers at this intersection? As far as I can tell there have not been any efforts to ameliorate this on-going problem.

The following are some additional reasons why I believe that we should not build a roundabout at Candelaria/Rio Grande:

1. Roundabouts create traffic jams and confusion about right of way. Currently, the roundabout at Indian School / near 12th street is problematic. People often speed through the roundabout even if they don't have right of way. I have been cut off and nearly hit when merging. I can't imagine the bottlenecks and confusion that would erupt if a roundabout were erected at Rio Grande/Candelaria as it is a very high traffic area.
2. There are other ways of enhancing the aesthetics of Rio Grande. For example, there could be several pieces of public art installed on the sidewalks/bus stops. Could the funding used to fund public art by the school children who do not normally have access to resources in the neighborhood? For example, Los Duranes elementary school students (100% free lunch; high poverty school) could collaborate with local arts to create murals that depict the rich history diversity embodied by our local community. The funding could be better used for making our sidewalks more pedestrian friendly and Americans with
3. Disabilities Act (ADA) compliant. I see many elderly and disabled people in my neighborhood in wheelchairs and walkers navigating very narrow sidewalks that have cracks and potholes. Parents with strollers are also struggling with the lack of maintenance of our sidewalks. **Could the funding go towards addressing these issues?**

I understand that some of the members of the Los Duranes Board of Directors support the roundabout, but as a voting member of LDNA I want to convey that I do not support the roundabout. Also, in the spirit of transparency, I also urge you to consider adopting a conflict of interest policy for all public speakers at City Council hearings. (I understand that one is already in place for councilors). For example, public speakers at all city council meeting, like all city counselors, should disclose if they have a potential conflict of interest (e.g., personal interest business, or other conflict via friendships, marriage, or any other relationship with any business that could potentially pose divided loyalty). Please confirm receipt of this email. Thank you!

Best regards,

Gabaldon Rd NW
Albuquerque, NM 87104
email:

RESPONSE:

1. *The intersection was not specifically compared to other intersections along the Rio Grande Boulevard corridor. The intersection was compared to City-wide averages for crash severity and similar volume intersections for crash rate. In both instances the overall severity was less than the City-wide average and the overall crash rate was below the average for a similar intersection.*



2. *Because the source of funds for the proposed intersection improvements are from the NMDOT Highway Safety Improvement Program and were specific to the construction of a roundabout intersection, the programmed funds cannot be used for other improvements along Rio Grande Boulevard. Sidewalks and pedestrian crossings are included in the intersection project; however, these improvements are limited to the intersection and intersection approaches. If the improvements specified in the grant are not implemented, the programmed funds would return to the state.*

From:
Date: Wed 9/11/2013 9:38 PM
Subject: roundabout

Hello,

I live on Camino de los Artesanos, and I attended the meeting last night 9/10/13.

One thing that was completely **absent from your analysis and presentation was the welfare of pedestrians in relations to the intersection**. Whenever I cross this intersection on foot, taking my dog for a walk, I feel that I take my life in my hands. Using the south crossing from West to East (coming back to my street from the ditch), danger is lurking both from the infamous left turn (west to south), and from cars turning right, going east to south. After waiting for the walk sign to cross and I start going, the west to south cars often would just keep going, basically conveying that unless I want to get run over I'd better stop in the middle of the crossing. This just happened to me this morning! After waiting for my walking sign, the car waiting to turn left going west to south just zoomed through, in spite of my waving and looking at him. He just ignored me. It happened to me countless times. At the same time, I have to watch my back from cars turning right from Candelaria because these cars tend to not look to their right, only to their left. As I start crossing I almost walk sideways, looking back to make sure that I am not getting plowed over by a car going from Candelaria east to south. I have developed an elaborate routine before I cross, which includes making sure that I make eye contact with the drivers in both directions, waving my arms to signal for them to wait for me to cross, etc. It's a nightmare. But as I have described: it does not always work, they are willing to run me over anyway. The same goes in reverse when I cross from the east side of Rio Grande to the west side. Whenever I can, in fact, I try to avoid having to cross Rio Grande by foot. Almost every day I drive (!) from our street to the ditch on Candelaria (west of Rio Grande) so that I don't risk my and my dog's lives. Other neighbors feel that crossing on foot first from south to north on the east side of Candelaria, and then making the dive east to west on Rio Grande is somewhat safer. I didn't find it to be so. In addition to the hazard of crossing Rio Grande, even staying on the sidewalk when I am turning into Candelaria going east, is hazardous. I never just walk on the sidewalk to make this corner: I make a cut behind the bushes next to Naomi and Scott's house so that I am more protected from the cars zooming through this corner, at times hitting the curve or sidewalk.

When we did the Charette the urban planning engineers introduce us to the concept of "walkability." I love this concept and it is clearly one central component in improving urban living. What I have described to you about the horrors of trying to use the Rio Grande and Candelaria intersection as a pedestrian is the extreme opposite of walkability. The City needs to take such considerations into account. And lastly, roundabouts are beautiful and can be a wonderful addition to our urban, or semi-urban, landscape. As is the case with the roundabout on Indian School, it is an opportunity to beautify



the whole area with art and landscaping, which is enriching and improving our quality of life: another thing to consider.

I am originally from Israel and visit there often: roundabouts are everywhere there, and have been for years, and they work great, they are beautiful, and they were found to be the safest solution in a country whose traffic and accidents problems have been worse than in most places in the world.

I hope you take all this into consideration and register my strong support for building the roundabout!

Sincerely,

Camino de los Artesanos,

Tel:

RESPONSE:

Pedestrian safety was evaluated as a part of the overall safety analysis of the intersection. The analysis was based upon reported crashes at the intersection over a nine year period. There was one pedestrian involved crash in 2005 and a second in 2008 during the period analyzed for the intersection. With only these two document crashes there is not a historical pattern that would warrant additional analysis based upon engineering standards.

From:

Date: Thu 9/12/2013 9:39 AM

Subject: Rio Grande Roundabout is the safest option!

I know that the original reason for the first study of the intersection was to make it safer. A roundabout is the safest configuration for that intersection and that was not mentioned in your presentation the other evening.

Safety was the concern that started this issue and is now being minimized in your report and cost benefit analysis. **Quality of life in our neighborhood is a benefit.** The sense that a pedestrian can safely cross Rio Grande is a neighborhood quality of life issue.

Somehow this important if non concrete benefit should be a part of a Cost Benefit Analysis!

Sincerely,

RESPONSE:

- 1. The discussion in Section 5.1 of the report states that a roundabout design would have a higher crash reduction than the other improvements evaluated. However, one of the objectives of the study was to assess the reported crash history of the intersection and to compare the findings to other similar intersections across the City. The analysis found that this particular intersection has an overall crash rate and severity that were well below citywide averages. Based on the data and the protocols for assessing safety, it cannot be concluded that a roundabout is needed to improve safety. This does not mean that the crash rate and severity would not benefit from a roundabout.*



2. *Quality of life is a benefit that is difficult to quantify. While values can be placed on quality of life factors, the cost-benefit analysis used for the reassessment followed the methodology used in the engineering profession (FHWA – Roundabouts: An Informational Guide). The method used focuses on quantifiable benefits including safety, traffic operations, and environmental benefits.*

From:

Date: Thu 9/12/2013 1:02 PM

Subject: Comments for Roundabout at Candelaria and Rio Grande

Comments and questions for Rio Grande Boulevard and Candelaria Road Intersection Evaluation A/E Job No. 7380-01, NTP #2, PB Project 33612
Post-September 10 meeting presentation

We attended the presentation on September 10, 2013 to determine whether our questions regarding the reassessment of the Roundabout at Candelaria and Rio Grande would be addressed and whether our opinion would be changed. The answer is no to both accounts.

First, our opinion is that there was a lot of work done in 2010 updating the Rio Grande Master Plan by hundreds of neighbors who participated in many meetings and a charrette. The resulting consensus was that, among several measures, a roundabout at Rio Grande and Candelaria would be included as part of the overall traffic calming measure for a roadway that was becoming more and more dangerous for residents who lived on or nearby to drive, walk, cross, or bike on the boulevard. We continue to fully support the Rio Grande Master Plan (draft Oct. 2010) and we continue to fully support the roundabout. After reading the reassessment of the study done by PB in 2008, we first of all find it suspiciously odd that the 2008 study seems to no longer have any merit and was wrong and now this study is the correct one. There were many flaws in this current reassessment study that were pointed out at the meeting and many unanswered questions, including some of our own.

Our questions and request for re-evaluation are as follows:

1. Why was only the immediate intersection evaluated when the roundabout is part of a larger plan for the Rio Grande corridor? Why was it not evaluated for crash and speed impacts in conjunction with the other measures such as reduction of number of through lanes on northern Rio Grande, parallel parking and pedestrian/bike improvements that were cited in the Rio Grande Corridor Master Plan? Since the other measures were not included in the evaluation, you need to abide by the Plan and do the evaluation such that it includes the measures in the Plan.
2. Crash data was removed from the original study to do this study, because as the engineer said, one of the accidents was from someone hitting someone else in their driveway. The engineer did not answer (when someone else asked) whether crash data was culled in the same manner at the other intersections that they compared the Candelaria/Rio Grande intersection to. Did you also evaluate the comparison intersections and remove unrelated crash data from them as well? If not, that is a flaw in the analysis that needs to be corrected.
3. Why were the environmental benefits of improved air quality not factored in to the cost/benefit analysis? Because roundabouts cause less idling cars, air pollution decreases and air quality improves (FHWA website on roundabouts). This needs to be factored in to the reassessment cost/benefit.



4. Money has already been set aside for the roundabout. Why was that not factored in to the cost/benefit analysis?
5. There are benefits beyond the roundabout that were not addressed, such as how a roundabout would help break up the drag racing that occurs in the middle of the night on Rio Grande. This needs to be factored in to the reassessment.
6. Why did you not evaluate some of the modifications that could be made at this roundabout to meet some of the special needs that are unique to this intersection (for instance adding a special measure such as crossing lights for equestrians)? The roundabout was treated as a generic design, this needs to be changed in the reassessment.

(These are questions/comments from the meeting made by others that we want to emphasize that you need to address)

7. Why did you only use peak PM delay for your analysis? You said that the other times were in the report but they were only cited in an Appendix and not used for analysis. That does not seem to be an acceptable analysis and is a flaw that needs to be corrected.
8. Why did you not use 2013 dollars for your cost/benefit of the roundabout? This is a flaw that needs to be corrected.
9. Why did you not account for safety of bicycles as the speed of cars increase? Would that not be a major factor in the benefit of a roundabout, which is proven to slow traffic down? This is a flaw that needs to be corrected in the analysis and in the cost/benefit.
10. Someone stated that there would be \$248,000 in savings/year due to the drop in crash rate from a roundabout, which would calculate out to the roundabout paying for itself in 6-7 years. Why did you not factor that in to your cost/benefit analysis? That is an adjustment that needs to be factored in to the reassessment.
11. Was speed not factored in to the cost/benefit analysis? If it was not, that needs to be corrected.
12. Was the cost of additional police pay factored in to the cost/benefit analysis? It will require, per your recommendations, additional police patrol hours which will cost thousands of dollars a year forever – these costs must be included in your cost/benefit analysis.
13. Why was risk reduction (speed) not addressed?
14. Why was the study conducted as though the intersection acts in isolation? Why was it not looked at in conjunction with the whole corridor and connected streets?

We need answers to all of our questions and questions that were brought out at the meeting before any further decisions are made about the roundabout. The study needs to be adjusted to correct the flaws that were pointed out in order to have a real evaluation. Because of the controversy, our suspicions are running high as no doubt are many others. This reassessment must be corrected and non-biased judgments made before any attempts move forward to kill this project.

Thank you, we look forward to your response,

Krogh Ct. NW
Albuquerque, NM 87104



RESPONSE:

1. *The objective of the reassessment was specified by Council resolution and was intended to update the 2009 traffic study with current traffic volumes and recent crash data at the intersection. The scope of the reevaluate was limited to the Rio Grande Boulevard / Candelaria Road intersection and was not intended to reassess the overall corridor. The Rio Grande Corridor Master Plan was not a part of the study.*
2. *Crash data was queried from the MRCOG and APD. Ninety crash reports were provided to Parsons Brinckerhoff. Review of the crash reports found that 15 did not occur at the Rio Grande Boulevard / Candelaria Road intersection. These crashes were removed from further analysis. The Rio Grande Boulevard / Candelaria Road intersection data from this analysis were compared to other intersections across the city. The data used were from summary data provided by MRCOG. While it is likely that incorrect crash reports exist within the city-wide data base, it is not practical to examine the entire data base and correct for errors. The MRCOG summary data are the best data available for comparison purposes required for this study and provide a valid information source.*
3. *While roundabout intersections can reduce vehicular emissions due to the lower delay that can provide, the benefits of a specific application must consider the site-specific conditions and parameters. The benefit-cost analysis did include calculations of fuel usage. Green house gas emissions and vehicle specific pollutants such as carbon monoxide and hydrocarbons are generally directly related to fuel usage. For this reason, fuel use is a reasonable surrogate for vehicular emissions, i.e., air quality.*
4. *The source of project funding is not considered a benefit in the methodology used for the analysis. Available funding indicates that a project can be constructed, not that it is appropriate to do so. The cost-benefit analysis utilized in this report was consistent with a standard engineering approach (FHWA – Roundabouts: An Informational Guide) that evaluates quantifiable benefits which include safety, operations, and environmental benefits.*
5. *Incidental and anecdotal behaviors such as “drag racing” are not explicitly factored in the analysis. However, the reduction in speed caused by a roundabout is considered in the calculations used for safety benefits.*
6. *The roundabout design used for the analysis was from the final design already developed by the City under another contract. The redesign of the roundabout was not considered.*
7. *The delay for the PM Peak was utilized to determine average daily delay based upon the percentage of PM Peak hour users versus daily users. Because the PM peak has the highest volumes, it provides a conservative approach. Detailed hourly traffic data was limited to the morning, noon, and evening peak periods. Hourly data for off-peak periods was not collected and therefore could not be modeled.*
8. *The benefit-cost analysis used dollar values provided in the reference document and methodology. Updates to the benefit cost analysis to reflect 2013 dollars were performed following the release of the reassessment report. While the findings changed as a result of the update to 2013, the overall findings and conclusions of the report did not change.*



9. *The safety of bicycles was evaluated as a part of the overall crash evaluation. There were a total of three bicycle involved crashes in the nine year analysis period. With only these three documented crashes, there is not a historical pattern that would warrant additional analysis based upon engineering study standards. The reduction of these crashes is included as part of the overall safety benefit that forecasts crashes for roundabout operations at the intersection.*
10. *Safety benefits and cost of crashes were part of the cost-benefit analysis for the roundabout.*
11. *See Response #5.*
12. *The additional cost of police was not factored into the cost-benefit analysis because it was not a part of any of the alternatives evaluated in the benefit-cost portion of the study.*
13. *See Response #5.*
14. *See Response #1.*

From:
Date: Fri 9/13/2013 9:27 PM
Subject: Questions I still have after September 10 public meeting

Ref: R-13-163

Dear Mr. Pennington and Councilors,

Below is a set of questions that I did not have the opportunity to ask at the public meeting on September 10.

- Attribution of 2012 crash rate to “2009 improvements to the intersection”
 - How, specifically, did the “2009 improvements to the intersection” – “restriping the east leg of the intersection to lengthen the existing turn bays” (page 6) contribute to fewer crashes? Lengthening the existing turn bays would certainly decrease impediments to traffic flow but how does it improve safety?
 - How, specifically, did the “2009 improvements to the intersection” impact the safety of pedestrians and their opportunity to cross?
 - When crashes in Albuquerque have declined by 21% (Appendix B) and the intersection’s “daily traffic volumes have declined 10%” (page 2), isn’t it more likely that the depressed traffic volumes are the accountable factor in any calculated reduction in crashes at the intersection? What is the compelling argument for attributing today’s crash rate to “2009 improvements at the intersection” rather than simply fewer people driving through it?
- It is stated (on page 1) that the crash rate at the RGB/ Candelaria intersection is below that calculated for similar intersections. “Similar” is defined (in Appendix C) as “intersections that have a signal and had at least one crash during the measurement year”. No data is presented for any other intersection. What are the intersections that are actually similar to RGB/Candelaria, and what are their crash rates? Have any of those intersections crash rates declined? A reader has no way of comparing this intersection with any others.
- Were the speed data for this study obtained while the temporary speed control measures (parked police car, additional speed monitors) were in place? If so, does that not provide an inaccurate picture of actual usual speeds on Rio Grande Blvd?



- On page 26, the report presents a section on “Environmental Benefits”. The entirety of environmental benefits is defined as fuel consumption. Roundabouts are well documented improvers of air quality. Why was air quality not considered in the cost benefit analysis. At this particular intersection, which has a long red light on Candelaria, a roundabout would provide noise reduction from fewer idling-and-gunning motorcycles and cars with booming sound systems. Why was noise reduction not considered in the cost benefit analysis?

RESPONSE:

1. *The improvements listed in the report were included to identify changes to the intersection made subsequent to the intersection study completed in 2008. It was not implied that these improvements were necessarily contributing factors to changes in crash rates or severity. However, it should be noted that restriping of the east leg of the intersection may have contributed to a reduction in crashes by improving capacity at the intersection. The influence area of an intersection includes three elements: perception-reaction distance, maneuver distance and queue storage distance. If any of these three distances is deficient, providing acceptable queue storage distance at an approach should lead to a reduction in conflicts.*
2. *See response to the previous question. The improvements were not implemented to specifically address pedestrian safety at the intersection or their ability to cross the intersection. However, the radar reader boards can have a benefit to pedestrian safety if they are effective at reducing travel speeds.*
3. *Even though there was an overall reduction in crashes at the intersection, the severity and crash rate metrics were also utilized as a part of this analysis to take traffic fluctuations into account. Severity is a ratio of severe crashes to total crashes. It is anticipated that a reduction in total crashes would also see the same corresponding reduction in severe crashes. Crash rate is a calculated ratio of total intersection crashes to entering vehicle volume.*
4. *The Rio Grande Boulevard / Candelaria Road intersection data from this analysis were compared to summary data provided for the MRCOG for signalized intersections with similar entering traffic volumes. The MRCOG summary data are the best data available for comparison purposes required for this study but a detailed review of the crash history at these additional intersections to identify trends was not completed or necessary for the comparison that was made.*
5. *The radar speed data were collected by a technician working from a SUV parked on the shoulder of the roadway and by data collected using pneumatic tubes laid across the travel lanes. No warning signs or parked police vehicles were used.*
6. *While roundabout intersections can reduce vehicular emissions due to the lower delay that can provide, the benefits of a specific application must consider the site-specific conditions and parameters. The benefit-cost analysis did include calculations of fuel usage. Green house gas emissions and vehicle specific pollutants such as carbon monoxide and hydrocarbons are directly related to fuel usage and travel speed. For this reason, fuel use is a reasonable surrogate for vehicular emissions, i.e., air quality. Noise was not considered in the analysis. Driver behavior that involves “gunning engines” and loud “sound systems” cannot be easily quantified and would likely occur regardless of the intersection design.*



From:
Date: Fri 9/13/2013 9:39 PM
Subject: Question raised at September 10 public meeting on Candelaria /Rio Grande intersection

Dear Mr. Pennington and Councilors,

Here is a written version of a question put forth verbally at the September 10 public meeting.

In your report, you weigh the benefits and costs of a roundabout and a protected/permissive left turn signal. My question is, **why was an element as important as excessive speed not weighed in your analysis.**

By your own traffic counts, (Appendix D) excessive speed is a major issue. Consider the data you present on Rio Grande Boulevard traffic that is approaching the intersection with Candelaria. As we all know, Rio Grande Boulevard's speed limit is 35 mph.

Using your data, if a person were to have spent a 24 hour period standing on the east side of Rio Grande about a football field's distance south of Candelaria, that person would observe that 15% of the vehicles approaching the intersection were traveling at speeds between 43 and 90 mph. (That's between 8 and 55 miles over the speed limit!) Again according to your data, the number of vehicles that amounts to is 671. (Or, 28 vehicles per hour, distributed evenly over the 24 hours.)

OK, let's go north of Candelaria and stand a football field's length north of Candelaria on the west side of Rio Grande Boulevard. Here we would observe that 15% of the vehicles approaching the intersection at Candelaria were traveling at speeds between 43 and 85 mph. (That's between 8 and only 50 miles over the speed limit!) The number of vehicles traveling in that speed range would be 969. (Or, 40 vehicles per hour, distributed evenly over the 24 hours.)

How much benefit would a roundabout bring to this situation? Well, if the roundabout were in existence, at about the two points at which we were standing and observing the speeding traffic on its way to the intersection, there would be merge signs which would begin to reduce speeds to perhaps 35. Then, 200 feet later, an actual merge into a single lane where speeds might go to 25 or 30, and then the 20 mph of the roundabout and the process is reversed on the exit leg. Speeds would have been brought down over a distance of about 2000 feet.

This is a far cry from and a vast improvement over what exists today. I would respectfully again ask why you did not credit the speed controlling and traffic calming properties a roundabout would bring in your cost/benefit equation and respectfully ask that you do so.

The answer given to my question by the consultants at the meeting is "there is no way we could quantify the benefit of speed reduction on that stretch of Rio Grande Boulevard and on that intersection".



RESPONSE:

Speed reduction was part of the benefit-cost analysis calculation and is part of the reason roundabout intersections are assumed to have a lower crash rate and severity. While a roundabout configuration physically limits the speed drivers can travel through the intersection, it does not physically limit the approach and departure speeds vehicles travel outside of the roundabout. Drivers can still accelerate and/or decelerate quickly and speed, especially if other traffic calming features are not present in the adjoining street segments. The design of approach sections will help control travel speed, but the posted speeds on the approach and departure segments can be ignored the same as occurs with the existing condition.

From:
Date: Mon 9/23/2013 8:50 PM
Subject: Rio Grande

I'm _____ and I live on the _____ corner of Rio Grande and Candelaria. I understand that the study says there are fewer accidents at the intersection, so the city is going to say no to the roundabout. But speeding is still a problem on Rio Grande. In about a week's time last May, there were three different accidents--a car went through the adobe wall on the corner of Campbell, something went through the cinderblock wall on the corner of Thomas Village, and a car hit the signal light pole on Griegos knocking it out during morning traffic. The dummy cars and speed trailers temporarily slowed traffic while the study was being done, but I still get passed every time I drive on Rio Grande. I still have difficulty and experience anxiety getting in and out of my garage with a driveway that backs into the intersection. I still get yelled at, cussed at, and flipped off by people in speeding vehicles.

Why did the new engineering study not address the environmental issues that the first studies did? These issues include exhaust and noise from vehicles stopping, idling, revving, and starting at the light. We live with these issues every single day all day and night long.

Also, the study did not address the uniqueness of the intersection being residential. It seems no one remembers that Rio Grande and Candelaria are neighborhood streets and people live on those streets and live very close to the intersection. That house on the corner of Rio Grande and Candelaria is my home. Just because I live on the corner, does **that mean that my expectations of a decent quality of life has to be sacrificed for speeding traffic and political agendas?**

I don't agree that this is a city council issue. It should be a safety issue. Isn't the city engineering department paid to make decisions based on their professional training, not political decisions to appease factions? It's obvious that the entire Rio Grande corridor is the problem and that needs to be addressed. I support making Rio Grande one lane.

Sent from my iPad

RESPONSE:

Environmental issues may have been evaluated as part of other studies conducted for the Rio Grande Corridor, but these metrics were not part of the 2009 study. The reassessment focused on safety and



traffic operations; it was not intended to evaluate intersection specific air quality, noise, and nuisance impacts.

Quality of life is a benefit that is difficult to quantify. While values can be placed on quality of life factors, the cost-benefit analysis used for the reassessment followed the methodology used in the engineering profession (FHWA – Roundabouts: An Informational Guide). The method used focuses on quantifiable benefits including safety, traffic operations, and environmental benefits as reflected by fuel use (which is an indicator of green house gas emission, carbon monoxide, and hydrocarbon emissions).

From:
Date: Tue 9/24/2013 2:25 PM
Subject: Re: Rio Grande and Candelaria Study

Dear Parsons Brinckerhoff,

I attended the meeting on September 10 and saw the presentation on the traffic study. For the most part it was well presented, but I had a number of questions about the study. Unfortunately, you did not offer a question and answer with the consultant before public comment so I could not ask my questions there.

To make matters worse, the projection screen was quite low so those in the middle and the back of the room could not see the data presented. Do you have a copy of you presentation for public review? If so, where could I get a copy?

Because I could not see the data, I was concerned that the reassessment was based on the most recent years of data, which showed improvement in the safety of the intersection. The consultant pointed out that his new data of less traffic might be due to the economic downturn. That is very likely the case, but **are we expecting it to remain down? Did you consider the possibility of greater traffic flow as the economy improves and there is renewed development on the Westside?**

As far as I could tell there was **no assessment of pedestrian and bike usability**. Safety and accidents, yes. But usability, no. Usability for vehicles appeared to be a big factor in assessing the cost/benefits of the current intersection versus a turning circle. This particular intersection gets considerable pedestrian and bicycle use from the surrounding neighborhoods because of the access to the recreational trails at the Nature Center at the end of Candelaria. This makes pedestrian and bike access at this intersection much more important than your typical intersection.

At the presentation it appeared the data had been broken up at the most recent 6 years and data collected prior to that. **Was the prior data collected from the original study examining the need for a traffic circle?** If so, I would be very interested in seeing the data and conclusions of the original study that had determined a need for this traffic calming measure in the first place. This whole process makes me wonder if all City projects were revisited a couple years later by a different consultant would they all be determined unnecessary?

This circle has become very political with lots of people making claims and judgments. Many of the judgments based on fact and fiction coming from both sides of the issue. I understand the fear of having something different and the learning curve that will take place. However, I know for a fact that my daughter would not have been in an accident where the car she was in collided into and broke a



telephone pole on the SE corner of that intersection. This happened 10 or 11 years ago (probably not included in your calculations) and fortunately she and her friend, who was driving, walked away relatively uninjured. Her friend, a fairly new driver, just took the turn too fast. Her friend's car was totaled and the pole needed to be replaced.

I like to make thoughtful decisions, and I would be very interested in reviewing the current study and the prior study (or if there was no study, the data) that determined a need for the traffic circle. Is this available for the public to review? If so, where can I access this information?

Thank you for your time.

Respectfully,

Near North Valley resident

RESPONSE:

The reassessment was a follow-up to a study completed in 2009 that assessed safety and traffic operations at the intersection of Rio Grande Boulevard and Candelaria Road. The crash data used for that study spanned the years 2004 through 2006 (note that this was the most recent 3 years of data available when the study was conducted in 2008). Crash assessments typically consider a 3 year (or more) period to reduce the influence of anomalies in the data set. The reassessment examined nine years of crash data between the years of 2004 through 2012. For ease of comparison, the nine year period was separated and tallied by 3 year increments: 2004 – 2006, 2007 – 2009, and 2010 – 2012. This allowed comparison of the original 3 year period to be compared to the subsequent two 3 year periods.

Traffic growth in the future was not considered. The crash data were evaluated using the crash rate and severity. By using a rate, the influence of moderate traffic growth would not likely result in a higher crash rate. With high traffic growth, the crash rate may increase as a result of more stop and go traffic conditions. However, when this occurs, crash severity typically goes down because of the slower operating speeds. If traffic growth were considered, the increased traffic volumes would affect both intersection designs and the operational problems identified would be exacerbated.

Bicycle and pedestrian usability was not part of the reassessment. The pedestrian and bicycle features of the intersection are consistent with many other typical City intersections. There are striped pedestrian crossings at each approach with pedestrian push buttons and signal displays with adequate crossing time. There are designated bike lanes along Rio Grande Boulevard; however, because the bicycle lanes on Candelaria do not extend through the intersection, bicyclists are forced into the travel lanes through the intersection. The roundabout design accommodates pedestrians and bicyclists per industry standard.

Pedestrian and bicycle safety were evaluated as a part of the overall safety analysis of the intersection. With five documented crashes involving bicyclists and pedestrians over the 9 year assessment period (3 bicycle and 2 pedestrians) there is not a historical pattern that would warrant additional analysis based upon engineering study standards. A reduction of these crash types is included in the safety benefit analysis that forecasted crashes for roundabout operations at the intersection.

With regard to the recommendations of the original study, that study identified a roundabout as one of several improvement options that could be considered to improve safety at the intersection. Given the



crash data reviewed at that time, this finding was reasonable based on the much higher crash rate and severity as compared to more recent data considered by the reassessment.

From:
Date: Tue 9/24/2013 2:49 PM
Subject: Rio Grande

My name is _____ and I live at _____ Camino de los Artesanos NW, Albuquerque, NM. I have a PhD in Operations Research. I wrote my dissertation in queuing theory and I have a minor in statistics.

1. On page 6 of the PB reassessment, it states that

"...the collision data were **screened** to include only crashes related to the intersection. This was accomplished by reading the report narratives to corroborate the crash location and type. This approach enabled crashes that were near, but not associated with the intersection to be removed from the database. Using this approach, fifteen crashes over the nine year assessment period were removed from the data set and thereby not included in the statistical analysis."

On page 7, Table 1 shows that there were a total of 75 crashes. I assume that this does not include the 15 crashes that were removed. This means that 16.67% of the crashes were removed. What would be the severity ratios if the 15 crashes were included? My training in statistics makes me uneasy when an analysis is done after "screening" the data. In which years did the excluded accidents occur?

In addition since the crash data for the intersection was culled to remove certain crashes which were deemed "not associated with the intersection", how can this result be compared to city average crash rates unless you follow the same procedure for all intersections in the data base? The overall crash data set followed a consistent standard, presumably. To apply one standard which is more strict to one intersection and to then compare that resulting modified crash rate to the overall city average crash rate, which used a different standard, is not a valid comparison.

In addition the report states that travel speeds range from 0.5 mph to 3.6 mph. Since data is collected in bins, is this a statistically significant result? If you look at the collected speed data anywhere from 23-34% of the vehicles are traveling in excess of 50 mph on Rio Grande. Speeds of excess of 90 mph were also recorded.

Part of the study was complete in June 2013 when Valley High was not in session. Valley high traffic does contribute to significant traffic along Rio Grande. Does the analysis in June have validity since it only represents the traffic about ¼ of the year?

The recommendation in the report based on the cost/benefit analysis calls for putting in a protected/ permissive left turn light on west bound Candelaria at Rio Grande. There are several problems with the cost/benefit analysis. Firstly, the figure of \$1.115 million for the roundabout is not additional funds required to complete the roundabout. I do not have a figure on what has been spent to date but it is my understanding that the engineering design has been completed. There may also be other tasks that have already been completed.

The second problem with the cost benefit analysis is that it is vehicle-centric. The only real benefit is to west bound traffic wanting to turn left from Candelaria onto Rio Grande will have a shorter wait. The



recommendations on page 2 state that the protected/permissive signal phase “would help reduce this type of crash and would like reduce the overall crash rate at this intersection.” The PB analysis (page 24) stated that the reduction for total crashes would be 0.08 crashes/year, and a reduction of total injury crashes of 0.01 crashes a year. If this analysis is correct, it would take on average 12.5 years to prevent a crash and 100 years to prevent an injury crash. So it seems to me that this solution does nothing to increase safety for vehicular traffic.

The report does not include time of day for the crashes in the intersection. Did these accidents happen during peak times. If not, then the traffic light will be more likely in permissive mode rather than protected mode. Permissive mode is what exists today so I’m not really sure how the light change will reduce accidents.

The third problem with the analysis and recommendation is that the does not consider safety issues for either pedestrians or bicyclists. I would like to point out that the original issue of the residents was to improve safety at the intersection for pedestrians and bicyclists.

RESPONSE:

Crash data were obtained from the MRCOG and APD. Ninety crash reports were provided to Parsons Brinckerhoff. Review of the crash reports found that 15 did not occur at the Rio Grande Boulevard / Candelaria Road intersection. These crashes were removed from further analysis. The Rio Grande Boulevard / Candelaria Road intersection data from this analysis were compared to other intersections across the city. The data used were from summary data provided by MRCOG. While it is likely that incorrect crash reports exist within the city-wide data base, it is not practical to examine the entire data base and correct for errors. The MRCOG summary data are the best data available for comparison purposes required for this study and provide a valid information source.

The collection of speed data was intended to provide information about the travel speeds on Rio Grande Boulevard. The reported drop in travel speeds was the difference in pneumatic speed data collected in 2008 as compared to the pneumatic speed data collected 2013, both of which used the same methodology. While it is correct that the data was sorted in 5 mph increments, analyzing the data in smaller increments would not shed more useful information about changes in travel speeds. Your statement that “23-34% of the vehicles are traveling in excess of 50 mph on Rio Grande” is not consistent with our data. Our data, as included in the report appendices, show 99% speed ranges from 49.6 mph to 52.2 mph and the 85% travel speed of approximately 43 mph.

It is correct that Valley High School was not in session when the intersection turning count data were collected. Analysis of hourly traffic flows within the project area shows the highest volumes occur during the evening peak hour. In contrast, the peak hour for the high school is mid-afternoon. Thus, the absence of the data that includes the influence of the high school may be undesirable, but is not a fatal flaw of the study.

The cost of the roundabout includes planning, design, and construction costs, even if some of the costs have already been incurred.

The low reduction of crashes with the addition of a left-turn phase is part of the cost-benefit analysis. While the benefit is low, the cost is also low which is reflected in the analysis and discussion. Time of day for each of the crashes is provided in Appendix A. The benefit of the left-turn phase includes both operational and safety considerations and would be greatest during peak traffic flows when drive behavior is generally the most aggressive. As stated above, the crash reduction factor for this improvement is low and therefore, does not result in this strategy having an unfair advantage over the roundabout in the cost-benefit analysis.



Pedestrian and bicycle safety were evaluated as a part of the overall safety analysis of the intersection. With five document crashes there is not a historical pattern that would warrant additional analysis based upon engineering standards. Any reduction of these crashes would also be taken into account as a part of the safety benefit that forecasted crashes for roundabout operations at the intersection. The cost-benefit analysis utilized in this report was consistent with a standard engineering approach (FHWA – Roundabouts: An Informational Guide) that evaluates quantifiable benefits which include safety, operations, and environmental benefits.

From:
Date: Tue 9/24/2013 10:57 PM
Subject: Feedback/Questions: Rio Grande/Candelaria Intersection

I want to preface by stating I have attended every meeting about Rio Grande Corridor including Charette, Steering Committee and all Rio Grande/Candelaria intersection meetings. I remember very well what the city and the adjacent neighborhoods presented to Parsons Brinkerhoff from the earliest discussion circa. 2006 throughout the process until this last meeting. I am also very aware of the written requests during earlier Parson Brinkerhoff Study requesting consideration of bicycle and pedestrian impacts (based on motor vehicle at and adjacent to intersection) and think it is important to know why these concerns were ignored and not part of the reassessment analysis. It would seem that PB, who has been prime consultant since the earliest discussions on intersection safety for pedestrians and bicyclists at Rio Grande/Candelaria, has some professional responsibility for solving problems identified during earlier stages. The work scope of this latest effort seems to have excluded many of the problems identified by community and Parson Brinkerhoff in the earlier 2006-2008 time period.

Comment 1—It is great to have DMD present physically but what is the point if DMD staff is not paying attention or engaged. Mr. Riordan and staff seemed surprised by the request for them to clarify and correct (which they did not do) Ms. testimony about "Streets and Traffic Enhancements Program (STEP) being implemented in 2010 and the implications of her testimony. Mr. Riordan or staff should have been listening to testimony and should have immediately clarified for entire audience. For the record, the \$250k STEP study performed by CH2M Hill has still not been presented to Council, nor have questions/concerns related to its impact upon bicycle/pedestrian travel on ALL roadways been addressed.

Comment 2—The Parson Brinkerhoff analysis presented to community was auto-centric and failed to address key issues for bicycle/pedestrian community, nor did it take into consideration that these are important activities in any neighborhood environment, which is a key and peculiar feature of this intersection. Various bicycle/pedestrian injury and fatality statistics like those in the attached pedestrian survivability graphic need to be included and considered by community, DMD and Council/Administration. To me, this was a serious omission. This effort, from it's inception, has been about much more than automobiles and horse trailers. It's been about walkability/bikeability in a neighborhood environment (and to some extent transit as stops conflict with standard roadway safety standards for pedestrian access (no crosswalk access to many of the stops).

Comment 3—Mr. and Ms. technical/mathematical analysis are of significant importance to bike/ped activities at and adjacent to intersection, especially in light of real costs vs. survivability for vulnerable users. I feel like the concerns they presented were passed over or discounted due to very narrow work scope.. It seems fair to ask for a response from DMD to the testimony of both and a



statement on the impacts of their analysis specifically on vulnerable bicycle and pedestrian roadway users.

Comment 4— I am assuming Bike/Ped was left out of PB World work scope. It seems reasonable and responsible to request a statement from our Councilor regarding why bike pedestrian concerns have been left out of this important neighborhood/corridor analysis. Especially since these were significant concerns presented to CABQ and PB from the earliest meetings.

Comment 5—Permissive left turn signal is only required at peak loads and will have significant negative impact on bicycles needing to turn South off Candelaria during non-peak hours unless expensive technology for detecting cyclists is incorporated. PB staff after the meeting stated that CABQ is shying away from implementing finicky and expensive bicycle detection equipment at intersections (though, at GABAC, it has been presented that CABQ has yet to study/implement even one bicycle detector at any intersection). Late at night, cars are often waiting at this signal for a couple of minutes waiting for light to change. Seems like a much better alternative since intersection is in residential neighborhood is some type of signalization that cues and clears intersection during off hours rather than idling and waiting.

Question # 1—Why were bicycle and pedestrian issues not incorporated into all aspect of PB's analysis of intersection and adjacent roadways and access zones? There are many pedestrian crossing within a few hundred feet of the intersection and these accesses play an important role in intersection dynamics. As does bicycle travel throughout area in several hundred yards each direction.

Question 2—The answer provided at meeting by PB staff on how specific traffic count and speed data had to be take 1000' from intersection to accurately get speed and vehicle travel data at intersection fails to capture important intersection specific data for bike/ped analysis. For example, I know that when the counters were out, there was also a mobile digital speed sign trailer in the area of the counters, not the intersection. From a bicycle seat, I observed drivers speeding up between speed sign tube locations and RG/Candelaria intersection (including one running red light). In the context of pneumatic tube/speed gun locations, how can we better analyze specific speed dynamics at the intersection and consequent impacts (probability and severity, etc.) on vulnerable bike/ped in the event of an accident?

Question 3—Bike/Pedestrian travel was not counted nor factored in study. What impact does that have on intersection analysis and was/is there any way that PB could factor in probability and survivability for these important activities at intersection? Also, how does the uncounted but real and significant increase of vulnerable users utilizing corridor factor into the intersection analysis? How does DMD factor in these important activities in light of this intersection being surrounded for .5 miles in all directions by residential neighborhoods instead of the more typical signalized arterial configuration? I am most interested in a response from DMD/PB that relates to bicycle travel since residences in vicinity of intersection have an average walk score of 18-22.

Question 4—In addition to severity and vulnerability factors for Bicycle and Pedestrian travel at RG/Candelaria intersection, what is DMD/PB position on Bicycle/Pedestrian level of service and safety at intersection in terms of reasonable expectation at a signalized intersection in a neighborhood environment? Of significant community interest is for those self-propelled travellers that use the intersection as a gateway to the nature center .5 miles west.

Question 5—What is DMD's policy for bicycle detection for safe and efficient travel at signalized intersections, especially those with left turn signals? Further, isn't this an important consideration for analysis and incorporation for STEP Program as it has significant implications community wide?



Question 6—A portion of the reduction in the severity of traffic crashes may be attributed to increases in automobile safety equipment and technology. Sadly, these same improvements have absolutely no impact on vulnerable bike/ped roadway users. What does PB/DMD recommend for increasing vulnerable user safety at intersection factoring in both a significant increase of vulnerable users and no significant decrease in average vehicle speeds at intersection/along Corridor (41mph average from red line on graphic PB presented indicates that in the event of inevitable collision, the survivability factor for vulnerable users is 10 %)

Question 7—Did Parsons Brinkerhoff review documentation from earlier efforts (2006-09?) as part of the reassessment to make sure issues identified by community were in fact addressed during reassessment process. If this was excluded from work scope of latest effort, did Parson Brinkerhoff identify the omission to project sponsors and DMD? Of particular interest is information and feedback provided by Mr. Juan Carlos Samuel and Parsons Brinkerhoff to neighborhood identified issues that lead to area residents supporting the roundabout solution. Similar, as part of the reassessment, did Parson Brinkerhoff review work done by Dover Kohl with adjacent neighborhood/associations input in 2010, especially the scoring that took place at the end of the 2010 Charrette?

Thank you for your consideration.

Sent with [Sparrow](#)

RESPONSE:

- 1. Bicycle and pedestrian crossing were only evaluated at the intersection which is the only legal crossing in the vicinity of the intersection. Pedestrian and bicycle safety were evaluated as a part of the overall safety analysis of the intersection. With five document crashes there is not a historical pattern that would warrant additional analysis based upon engineering standards. Any reduction of these crashes would also be taken into account as a part of the safety benefit that forecasted crashes for roundabout operations at the intersection.*
- 2. Intersection specific data is typically not collected because of the influence of the traffic signal. A portion of the traffic is stopped at the intersection and the intent of speed data collection is to collect flowing traffic. Intersection specific data would not be reliable. The vulnerability of a pedestrian or cyclist was not a part of this reevaluation as there is an understanding that they are vulnerable. This study utilized crash history to identify if there was a quantifiable issue pertaining to pedestrian and bicycle incidents at the intersection.*
- 3. Bicycle and pedestrian volumes were counted in June 2013 with traffic. There were a total of 38 pedestrians and 106 bicycles counted. Bicyclists and pedestrians were addressed in the safety analysis. Probability and survivability were outside of the charge of this project which was to update the data and analysis presented in the 2009 Study.*
- 4. The questions regarding pedestrian and bicycle level of service, bicycle detection, bicycle/pedestrian vulnerability, the review of previous public comments, and the findings of the 2010 design charrette were beyond the scoped objectives of this assessment.*



Meeting Comments

The following comments were received in writing at the public meeting. In some instances, the authors were anonymous. The content of the comments include personal opinions, comments, and questions. The opinions and comments are included but do not include responses from the project team. Responses are limited to specific questions included in each comment form.

- 1. I didn't hear anything about the high school factor. How many of the crashes involved a teenager or they come + go to Valley HS? How many of the studies involved nearby HS? (Your computer models model the average driver not the teenager going to + from school.

The roundabout on central scares me to death because too many people don't understand how to work it. I don't understand "yield")

RESPONSE:

The crash data obtained for the study from MRCOG and APD did not include information that could be used to determine if drivers were students or teenagers. This information is available in the police reports but was not included in the crash data available for our analysis. Thus, the data and findings are not sorted by age, occupation, or gender.

- 2. Your presentation was interesting and informative. However was there any study on pedestrian usability and safety. Also what was the score for the intersection in the earlier date range presented? If the lower traffic #s are because of the economic downturn, is this the best baseline? It would have been good to have a Q & A before you went to community comments.

RESPONSE:

Bicycle and pedestrian usability was not part of the reassessment. The pedestrian and bicycle features of the intersection are consistent with many other typical City intersections. There are striped pedestrian crossings at each approach with pedestrian push buttons and signal displays with adequate crossing time. There are designated bike lanes along Rio Grande Boulevard; however, because the bicycle lanes on Candelaria do not extend through the intersection, bicyclists are forced into the travel lanes through the intersection. The roundabout design accommodates pedestrians and bicyclists per industry standard.

Operationally the intersection is consistent with what was analyzed in 2009 in terms of Level of Service (operations are acceptable during each of the peak periods. Crash severity for the initial study period was 0.41 and the crash rate was 1.48 crashes/million entering vehicles. The crash severity and rate for the most recent 3 years of data were 0.14 and 1.24, respectively.

The purpose of this study was to update the 2008 traffic study with current traffic data. Forecasting future traffic conditions was not a part of the scope of this study. The intent was to evaluate the intersection with signal and roundabout control to assess operational and safety performance based upon current conditions.

- 3. - I am submitting a written report that critiques and corrects some major flaws in your reassessment study. I have the following questions that relate to some major issues addressed in my report:



- a. The PB Reassessment calculates daily delay based on the congestion during the worst hour of the day, the PM peak hour. That is a huge distortion and bias against the roundabout, which actually has less delay than the signal during other hours of the day. Why was this done?
- b. The PB Reassessment then calculates the dollar value of that delay using mean wage. FHWA recommends using 50% of the mean wage. This is another bias against the roundabout. Shouldn't you follow FHWA guidelines?
- c. The roundabout's safety benefits are in 2001 dollars, and need to be corrected to 2013 dollars. That was yet another bias against the roundabout. Shouldn't you make this correction?
- d. The difference in "environmental" – which was computed based simply on fuel costs – needs to be revised to reflect different levels of congestion throughout the day. Don't you agree that time-of-day analysis is necessary to accurately reflect fuel costs?
- e. Why wasn't SIDRA software – which is capable of analyzing both signalized and roundabout intersections – used for all intersection configurations, instead of just for the roundabout? Might there nit be a lack of consistency between the different software programs?

Final Comment: When I corrected these flaws in my report, the roundabout was found to return very substantial NET benefits, net of cost, and would be an excellent public investment.

RESPONSE:

- *The daily intersection delay calculated for the operations benefit element of the benefit/cost analysis did not assume that the delay during the pm peak hour applied for all 24 hours. Hourly turn movement counts are not available for each hour of the day. For this reason, daily delay was calculated by projecting PM Peak hour delay as 10% of the daily delay. While this results in a conservative analysis, the same methodology was used for each of the four intersections scenarios evaluated.*

To assess the differences that would occur if a different methodology was used, daily delay was calculated using a more refined approach based on each of the 3 peak hours for which count data was available. This approach found daily delay for the four scenarios as follows: no-build – 66.5 hours/day; roundabout – 80.0 hours/day; permissive/protected signal – 68.1 hours/day; and protected signal – 116.1 hours/day. The effects of this change on the overall benefit/cost assessment is provided below.

- *The benefit/cost assessment was updated assuming 50% of the mean wage. The effect of this change on the overall benefit/cost assessment is provided below.*
- *The benefit/cost assessment was updated to reflect 2013 dollars. The effect of this change on the overall benefit/cost assessment is provided below.*
- *The environmental benefit calculations were updated using the updated delay calculations discussed in the first bullet.*
- *The analysis of the signalized scenarios was prepared using the Synchro software. Synchro is the tool used by most traffic engineers and agencies for the analysis of signalized intersections.*



SIDRA is one of the industry standards for the analysis of roundabout intersections. While SIDRA can be used to analyze signalized intersections it is not the model of choice for this type of analysis. Moreover, the signalized intersection analyses completed for the 2009 study were completed using Synchro. Using the same software for the reassessment allowed comparisons with the previous analyses, which was a primary objective of the reassessment.

The benefit/cost analysis was updated using the above inputs. The results did not change the previous conclusions. None of the intersection treatments evaluated show a positive benefit/cost. The updated benefit/cost ratios are as follows: no-build – not calculated as this scenario is the baseline; roundabout – negative 1.68; and permissive/protected signal – negative 2.95.

It is worth noting that benefit/cost calculations are one of multiple factors that help inform the decision process. Even though the cost of a strategy may be less than the quantifiable benefits that result, the strategy may still be a reasonable investment.



Meeting Comments

The following are verbal comments made by participants at the public meeting held on September 10, 2013. The meeting was held at the Indian Pueblo Cultural Center, and was scheduled for 6:15 p.m. to 8:30 p.m. The meeting included opening remarks and introductions from 6:15 p.m. to 6:30 p.m. followed by a presentation of the intersection reassessment by Parsons Brinckerhoff from 6:30 to 6:50. Public comment was taken from 6:50 to 8:20, when the meeting was concluded. The numbered sections listed below are a record of that public comment. They include the name of the person who was speaking, and the primary issues that were raised. The notes are not intended to be verbatim, but rather the spirit of the speakers' comments and questions. Comments were recorded on a screen visible to the meeting participants.

Many of the comments are opinions and/or commentary by the speaker. Responses to these comments are not included in this document. Responses are limited to questions asked by speakers.

1. – I think it was a good presentation. I have some complaints, but this isn't the right place to air them. I don't want a roundabout. It's a waste of money. I wish the study would have been done at the beginning, so the City wouldn't have wasted so much money. If the study said the roundabout was the best option, they should have had a meeting at City Council and decided that it is the best thing to do, but that isn't what they did. The two minute speaking rule violates my civil rights. I can't say everything I want to in two minutes. I want to challenge the decision to shut me up in two minutes. This is the only time I have to tell government what I feel. You shouldn't have gotten the room for a certain period of time. If the meeting was in a room that was free, there would be more time to talk. You should give everyone as much time as they want to speak.
2. – I frequently walk and drive in the area. A lot of money would be used to build the roundabout. We shouldn't forget that we need local money to match federal funds. The best way to save money on a half off coupons is to not use them on things you don't need. The City shouldn't build the roundabout. The same results could be achieved at a fraction of the cost. I've heard it said that returning the money to the feds would make Albuquerque look like a bunch of flakes. Spending money on something we don't need would make Albuquerque look fiscally irresponsible.
3. – I live on the east side of Campbell Road. For 40+ homes, the only way to get out of the neighborhood is using Rio Grande Blvd. A roundabout would move the problem from Rio Grande & Candelaria to other streets north and south of the intersection. I recently went to Italy, and saw how roundabouts worked. The lanes in front of Campbell Road will go from two to one lane, this will constrict traffic. I am a member of open space, and do Bosque patrol on horseback; waiting for the light to change to cross is ok, but if there is a roundabout there will be a steady stream of traffic, which will make it hard to cross. Also, it is fiscally irresponsible.
4. – I'm a retired math teacher, and live in Alvarado Gardens. I pass through the intersection several times a day, usually as a part of eastbound traffic. It is hard to get out of the neighborhood. I have two grandchildren, and the responsibility to transport my grandchildren. I believe in the traffic calming of a roundabout and would like for it to be built for those benefits. Traffic calming would benefit everyone moving through the intersection.
5. – I go through the intersection many times a day. I had all my questions answered. I support all three recommendations contained in the reassessment report.



6. – I am a new resident. I'm on the fence about the roundabout. I heard that they are good for traffic calming, but it seems expensive. The Rio Grande Neighborhood Association sent a letter with some questions on the analysis contained in the report. **How was the delay calculated? How are bicycles accommodated? There are quite a few bicycles on Rio Grande. Are roundabouts safer/less safe for bicycles? What are the crash statistics regarding bikes?** If bike traffic is going up, this is an important issue. The study didn't look at larger corridor issues. If a roundabout sooner or later is going to have benefits, do it now.

Response

- *Delay was calculated using industry standard traffic models and the methodologies prescribed by the 2010 Highway Capacity Manual. The signalized intersection was assessed using the Synchro software. The roundabout was assessed using SIDRA software.*
 - *Bicycles can travel through roundabout intersections in two ways. Because of the slow speeds through a roundabout, bicyclists can use the traffic lane in the same way as cars. As an alternative, bicyclists can dismount and use the pedestrian features of the intersection.*
 - *Research indicates that, given a properly designed single-lane roundabout, motorist and pedestrian safety is almost always improved when compared to conventional intersections. Roundabouts have fewer conflict points and lower speeds compared to conventional intersections, resulting in an overall reduction in the severity of crashes for all users. A forecasted crash rate for the roundabout intersection was calculated based upon general geometry and volume data. Bicycle crashes would be included in the forecasted crash number. Over the past nine years of data there were three recorded bicycle involved crashes. The forecasting does not provide specific crash type forecasting to determine if there would be an increase or decrease in bicycle crashes.*
 - *There was no specific crash forecast related to vehicle queuing. A forecasted crash rate for the roundabout intersection was calculated based upon general geometry and volume data would include these crashes.*
7. – I live on Campbell Rd. There is no way out of the neighborhood except Rio Grande Blvd. With a roundabout, you will have two lanes converging into one. There is a steady flow of traffic from the south, which makes it very difficult to get out of Campbell Rd. I drive through the intersection no less than 4 times a day. I'm not opposed to roundabouts in general, but at this intersection, it would make other intersections in the area more dangerous. It is fiscally irresponsible to spend all this money for very little gain. Speeding is a problem, and cars would be racing to the roundabout, only slowing down within intersection. It would only benefit a small area. The best solution has been an empty, parked police car. I suggest keeping a police car parked in the area, and putting a real officer in the car every once in a while.
8. – I understand the title of the report, "Intersection Reassessment". There was a study done in 2008, this is not the first time a study was done. The new data shows that traffic and injuries have gone down, for whatever reasons. It is foolish to say that the government just dreamed up a roundabout, it was based on data. I'm a bicyclist; I bicycle to the Co-Op, and through the roundabout at Indian School and 12th Street. As a bicyclist, I feel much safer going through a roundabout. I have had experience in Europe: traffic moves with roundabouts and stops without them. It is a pleasant way to get around. I appreciate the work done. **I have a question about injuries; do they go down with roundabouts?**



Response --Studies have indicated that roundabout reduce the severity of crashes at an intersection.

9. – I have a unique perspective, having lived in other cities. Speeding is a city wide epidemic. I live a couple of doors north of the proposed roundabout, and I don't want to have to fight to get around it. I refuse to walk because of laziness and fear, and I won't cross at Matthews because that intersection is worse. The traffic would be held up in the evening even worse than it currently is with the construction around the intersection. For those reasons, I am opposed to the roundabout.
10. – I live on Kestrel Court. A one way in and out cul de sac. W can't turn left because of median at Campbell Road. Traffic will back up with roundabout, and we won't be able to get in or out. A roundabout will make the situation more difficult and dangerous. I am opposed to roundabout. The study shows, this is a solution without a problem. I don't know why money is being spent considering a roundabout. A roundabout will push the problem south and north.
11. – I live at Rio Grande Blvd. and Griegos Rd. The sky won't fall if we get a roundabout (in favor of a roundabout).
12. – I would like to thank Debbie O'Malley for her thoughtful analysis of roundabout safety and costs. Simply put, Debbie O'Malley asks us to ignore the data. The intersection is relatively safe? Ignore the data! The roundabout is not cost effective? Ignore the data! I think that Debbie O'Malley is perfectly right to ignore what's really important. Pineapples and monkeys! Thanks to Debbie O'Malley, but she asks us to ignore data. The intersection is safe. Focus on what is important.
13. – (Regarding the report that he submitted to City Council) **I have an issue with how the delay was computed. The PM Peak delay was used; the other times are calculated but not used in the cost analysis. It is a huge distortion of the facts. Roundabouts function better at other times. The penalties used for the delay, resulting from a roundabout, are much smaller than what the study showed. The money factor of delay is exaggerated by a factor of two. The study doesn't follow the Federal Highway Administration Guidelines. The safety benefits should have been inflated to 2013 dollars. The estimated fuel costs were based on PM Peak, and it is not clear why these were used instead of another time. Why were two different kinds of software used?** This raises a question about consistency. The benefit cost ratio for a roundabout is much greater than one. It will pay for itself in period of one to two years.

Response – See response to questions from Mr. Ives in the previous section

14. – I'm on the Board of the Near North Valley Neighborhood Association. I am concerned about public process. There was a process and a decision made. The problem is you do the process, and the majority of people don't get the word. Then people come out and say you never told us. We tried, and the City tried. There are always some that don't get the message. The jerks that will ignore the roundabout yield requirement are the same ones that are speeding in the first place. There is no perfect safety, but a roundabout might be better. Certainly the Indian School roundabout works better than the old intersection. Fellow board members have different views. Regarding accessibility, **how do you cross with a wheelchair?** I don't appreciate the leading robo call asking for support of a roundabout described as "wasteful" or support for the other "low cost" solution.

Response – Persons in wheelchairs would cross the roadway at designated ADA accessible pedestrian ramps. The user would only cross half of the road at a time utilizing the roundabout splitter island as



refuge in the middle of the road. Because the crossings at a roundabout are not controlled by a pedestrian push button activated signal, all pedestrians will utilize gaps in the traffic stream to cross the roadway

15. – I am concerned about the left turn modification. **How specifically will it impact pedestrians? Will it be safer and faster for pedestrians? Won't this make it harder for pedestrians to cross? How does a protected left turn prevent running red lights and speeding on Rio Grande? How does it slow cars down?** Running red lights is a major issue. Statement: COA should plan to restore the semi-rural character of the area, like in Los Ranchos, and prevent the growth of a speed corridor. Make it more usable for pedestrians and bikes.

Response – Pedestrians would still receive the same amount of crossing time as currently exists at the intersection. Pedestrian safety may be improved for the crossing at the south side of the intersection as a result left-turn traffic having a dedicated signal phase. The addition of a left-turn phase would not reduce speeding on Rio Grande. It may reduce the number of vehicles who run the red light for the westbound to southbound movement.

16. – I am against the roundabout. A survey was done where hundreds were surveyed; two out of three were against the roundabout and remain that way. I thought this was a democratic society where when the majority doesn't want something, it usually doesn't happen. A small percentage wants a roundabout, the majority doesn't. It would be a better deal to spend \$10,000 on other improvements.

17. – I live in Los Duranes. I use the intersection frequently, at least 4 times a day. I don't want a roundabout. I've had two negative experiences with the roundabout at Indian School and 12th Street. When there is a line of cars backed up, I have had to wait at least five minutes. I wouldn't have waited more than two minutes at light. A traffic accident at the intersection would paralyze traffic in all directions. What is appropriate when there is an accident in the intersection? I am against the roundabout.

Response – Because the roundabout is a single lane, crashes within the circulating roadway of a roundabout can create significant congestion.

18. – I live at the northwest corner of Rio Grande and Candelaria. I support a left turn signal. District 2 did a poll. The results were: 83% in support of a left turn, 17% in support of a roundabout.

19. – **Why was excessive speed not weighed?** The speed limit on Rio Grande is 35 mph. Using data from a 24 hour period, the following analysis was calculated from data provided in Appendix B of the report: standing on Rio Grande, 15% of vehicles approaching the intersection were driving 43-90 mph, the actual number of vehicles was 671. On the west side of Rio Grande, 15% of vehicles were driving 43-85 mph. The benefits of a roundabout include: reduced speed at the actual merge of lanes, and a slowdown of traffic for 2000 feet on either side of the intersection. **Why didn't they credit the speed reduction and traffic calming that a roundabout would bring into cost benefit?** I suggest adding a cost variable. In response to the proposed solution of more police patrol; the roundabout is an engineered solution, there are no operating costs associated with it, like there would be with extra police.



Response -- Responses to the questions raised by Ms. Johnson are included in the first section of this document.

– I have experience with operations research, and queuing theory. The collision data was screened to include crashes related to intersection. Crashes that were near the intersection but not associated were removed. **What would the statistics look like if those crashes were included? What years did those crashes occur? Was the data compared for that intersection compared to other intersections? What time of day were the left turn crashes?**

Response -- Responses to the questions raised by Ms. are included in the first section of this document.

20. –What I was going to say has already been said. Not having a roundabout is more in keeping with the character of the valley.
21. – The City should look at the “Florida blue lights” that have recently been used in Florida. When an officer sees a blue light they know someone has committed a traffic violation. Blue lights have reduced crashes.
22. – The study is easy to understand. I have been a horse owning resident since 1970, and I am on the NM Horse Council. The STEP was approved in 2010. I want to maintain the environment and neighborhood character. The pedestrian/horse trail crossing is used. You can cross Rio Grande at Campbell, Headingly, and Griegos. Not providing gaps in the traffic stream can be dangerous. I think they should eliminate the proposed roundabout.
23. – I live on Campbell Road, and have an MBA from Anderson School of Management. I want to follow up on the Ives report. You should look closely at the cost benefits. The delay was based on peak pm hour for two of the areas studied. When you calculate the delay that way, you discriminate against a roundabout. A signal change causes a delay when you have to stop. At a signal you waste gas, and lose time. Regarding safety; there is no contest. The peak pm distorted the data. You should look at weekend traffic counts too. A roundabout would pay for itself in six to seven years.
24. – Speed is a big problem on Rio Grande Blvd. The speed trailers slowed traffic some, but there is still a problem. I have anxiety at the intersection. The study didn’t address the environmental issues of exhaust and idling at the light. No one remembers Rio Grande and Candelaria is a residential area. Just because I live at the corner, does that mean I have to sacrifice quality of life? This is not a City Council issue, but a safety issue. It shouldn’t be based on politics. The entire corridor is a problem. I support making Rio Grande one lane.
25. – In response to a previous comment; the STEP program was not implemented in 2010. Has the traffic calming of roundabouts been considered. I am a bicyclist, who serves on the ABQ commission. I have been involved in bicycle issues since 2004/2005. In regards to this process, there has been a failure to take public process into consideration. At every meeting concern about high speeds has come up. **What happens at certain speeds when there is a pedestrian or bicyclist involved? At 30mph one out of ten survives. This critical factor should have been discussed. Regarding the report of accidents going down, it has to do with auto safety equipment. What about statistics regarding pedestrians and bicyclists? Is the Level of Service for bikes and pedestrians important? Because we’ve ignored it in all studies. What was the location of the speed counters?**



They weren't at the intersection. They were placed 1000 feet south and north. The speed gun was done at one time, and doesn't factor other times.

Response -- Responses to the questions raised by Mr. are included in the first section of this document.

26. – One area that was not discussed well in the presentation was the element of risk reduction. The management of speed is a key factor, and wasn't a factor described in the presentation. I am a heavy user of the intersection, and think it would benefit from range of options. Valley High School wasn't a factor in the Study. Looking at only the intersection and not the corridor as a whole is foolish. There have been other changes in the area that were not taken into consideration. The intersection doesn't operate in isolation. We would be better served by considering the larger area. Addressing the traffic flow with an inexpensive left turn would be beneficial while looking at the bigger picture.
27. – I am a resident of Los Ranchos. I use the intersection daily, traveling south to the freeway. I am concerned that a roundabout will push traffic in both directions. The speed limit in Los Ranchos is 25 mph. When you get to Griegos Rd., people shoot past you. A roundabout will only temporarily reduce speed. I am also a bicyclist concerned about mixing with traffic. The roundabout at Tramway is very scary for bikes. Candelaria at the Nature Center is an access for bikes and pedestrians, this factor should come into play in the decision. Valley High School traffic should also be considered.
28. – I am in favor of roundabouts. The driving experience is much happier when things are slower. I don't mind being cautious going through a roundabout. Most intersections are scary. The roundabout route is the right track. Also I think you should consider pedestrian activated crossing signals on Rio Grande, either in locations that already have crossings, or at intersections, and the roundabout.
29. – How are bikes and pedestrians considered when lanes change and merge. **Were the cost benefit accident statistics likely to go up for the lane change merge? Why wasn't it considered?** It is part of the model. When you eliminate the bike lane, **how did you calculate if it was safer or less safe for bikes? Did you include statistics regarding accidents with a roundabout? Would bicycle accidents be higher or lower?** This is a weakness of the study. You showed that for a car it is safer. It's not as clear when you mix bicyclists and pedestrians. **Did you include the additional accidents from queuing?** There are four safety themes, and you haven't addressed any of them? You will find out the roundabout is bad idea, but include the safety factors in the study, because they come up at every meeting.

Response

- *The lane change merge was not included in the analysis completed for this report. The charge of the study was to exclusively look at the intersection and not other points along the roadway.*
- *Research indicates that, given a properly designed single-lane roundabout, motorist and pedestrian safety is almost always improved when compared to conventional intersections. Roundabouts have fewer conflict points and lower speeds compared to conventional intersections, resulting in an overall reduction in the severity of crashes for all users. A forecasted crash rate for the roundabout intersection was calculated based upon general*



geometry and volume data. Bicycle crashes would be included in the forecasted crash number. Over the past nine years of data there were three recorded bicycle involved crashes. The forecasting does not provide specific crash type forecasting to determine if there would be an increase or decrease in bicycle crashes.

- *There was no specific crash forecast related to vehicle queuing. A forecasted crash rate for the roundabout intersection was calculated based upon general geometry and volume data would include these crashes.*

30. – I am part of Los Griegos Neighborhood Association. When there was a pile up on I-40, the City diverted traffic (semi's) to Rio Grande and Candelaria. The semi's had a tough time making the corner with a traffic signal. **How would that be addressed with roundabout?**

Response – *Roundabout intersections have a mountable central island (truck apron) that can be traversed by longer vehicles that cannot negotiate the circulating roadway.*

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