#### EXECUTIVE SUMMARY

The intersection of Jackson Boulevard and Mt. View Road operates with minimal delay in its existing configuration; however geometric improvements to the intersection are required to meet current design standards. The skewed intersection creates confusion with the visibility of signal heads for southbound and westbound vehicles. Southbound left vehicles have limited visibility angles and trouble identifying adequate gaps in traffic. There are no accommodations for pedestrians at the intersection. Knowing these geometric and pedestrian deficiencies exist alternate configurations were considered to improve the performance and safety of the intersection.

The purpose of this study is to analyze a number of alternative reconfigurations of the intersection that will improve the overall safety of the intersection, provide a satisfactory operational level of service and accommodate pedestrians. Ten configurations were designed and analyzed. Each configuration is discussed in detail and intersection layout sheets can be found in Appendix A.

Detailed traffic analyses were performed for all options and summaries of options 1, 3 and 6 are included as Appendix C. Option 2 is not included in the summary due to its high cost to benefit ratio when compared to option 3.

Along with the design and analysis of the intersection, two public meetings were held to present the alternatives and receive public input. The first public meeting, held April 20, 2010 had limited attendance. Those in attendance were generally against any reconfiguration that would require removing the on-street parking from Jackson Boulevard. At that meeting no options existed beyond option 3. After development of additional options and additional analysis, a second public meeting was held August 31, 2010. The meeting was well attended by over 120 people. As evidenced by comments made at the meeting and written comments received after the meeting the attendees were generally not in favor of a reconfiguration of the intersection that would redirect more of the through traffic onto Mt. View Road.

Design staff met with City of Rapid City Growth Management and Public Works staff on July 21, 2010 to present in-depth analysis of all the options and to present the Departments preferred options, options 3 and 6. Options 3 and 6 were discussed in detail. The minutes from that meeting are included in the appendices.

In addition to the ten configurations that were analyzed in detail, a multi-lane roundabout was considered, but not analyzed. During the PM peak, heavy volumes from southbound Mt. View Road and westbound Jackson Boulevard enter into the roundabout which would have only one exit leg. This funnel effect would cause traffic congestion and make the intersection prone to crashes. Multi-lane roundabouts, in general, have not been shown to be as safe as a single lane roundabout or safer than a traditional signalized intersection.

The Department has chosen option 3 to be preferred over the other options. This decision has been made after considerable analysis and input from City staff and the public. For option 3 to be constructed, the Department must acquire permission from Rapid City's City Council to remove five on-street parking stalls on what is currently public right-of-way within the City's jurisdiction.

Opt #	Alignments	Mt. View PCC Removal	Entrance B Left in / Left out	Reduce or eliminate skew	Removal of Jackson on-street parking	Right-of-Way acquisition	Intersection Clearance Time (seconds)	Intersection LOS (2030 worst case peak)	Queue backs through Fulton (PM Peak)	Amount of Mt. View pavement removal	Estimated Cost to Construct	Estimated User Costs per Year	Other
Exist							5.5	В	No			\$252,320	
1	No change to existing	No	In only	No	No	No	9	С	Yes	\$0	\$214,400	\$367,090	Long clearance time = potential for red light runners; Not a recommended practice
1a	No change to existing	No	Yes	No	No	No	9	С	Yes	\$0	\$231,880 \$442,8		Long clearance time = potential for red light runners; Not a recommended practice
2	Mt. View turned into Jackson 42° from perpendicular	Yes	No	Yes	Yes	Yes	7	С	Yes	\$9,413	\$622,840	\$337,630	Long clearance time = potential for red light runners, 35 mph curve
3	Mt. View turned into Jackson 17° from perpendicular	Yes	Elim	Yes	Yes	Yes	6	С	No	\$7,492	\$522,920	\$302,900	25 mph curve. Entrance B eliminated.
За	Same as #3, but 40' further SW	Yes	In only	Yes	Yes	Yes	6	С	Yes	\$7,366	\$464,420	\$521,500	20' wide lanes needed to accommodate WB-67. Entrance B signalized
3a- COA	Same as 3a	Yes	Elim	Yes	Yes	Yes	6	С	No	\$7,366	\$443,180	\$302,900	Entrance B eliminated
4	N leg of Jackson turned into Mt. View - separate EB through lanes, u-turn area, no movement for SB to EB, single EB to NB through lane	Yes	No	Yes	No	Yes	6.5	С	Yes	Not Analyzed			Doesn't meet movement needs, Traffic analysis is a very rough estimate
5	Similar to #3, but reverse curve on Mt. View	Yes	No	Yes	Yes	Yes	6	С	Yes	\$6,335	\$550,180	\$521,500	Entrance B signalized
5a	Similar to #3, but reverse curve on Mt. View	Yes	Elim	Yes	Yes	Yes	6	С	No	\$6,335	\$528,940	\$302,900	Entrance B eliminated
6	N leg of Jackson turned into Mt. View - EB movement in dedicated right turn lanes to continue onto Jackson	Yes	Yes	Yes	No	Yes	5.5	В	No	\$7,830	\$650,070	\$374,435	Issue of island needs on north leg of Jackson and Entrance A being in taper or turn lane

Cost estimates do not include signal, striping or dowel bars

### BACKGROUND

The Department has programmed the reconstruction of Jackson Boulevard (SD Hwy 44) from Rapid Creek north and east to the intersection of Mt. View Road in Rapid City for Fiscal Year 2011. Reconstruction will include new Portland Cement Concrete pavement, storm sewer, lighting and signals at Argyle Drive, Sheridan Lake Road and Mt. View Road intersections. The roadway will be reconstructed to include at least 5 lanes of traffic, accommodations for on-street bicyclists and be ADA accessible for pedestrians

For the purposes of describing the different legs the intersection, Mountain View Road will be described with a north/south orientation and Jackson Boulevard will be described with a east/west orientation.

As it exists today, southbound Mt. View Road traffic wishing to make a left turn onto Jackson Boulevard does not enter the signalized portion of the intersection. Southbound Mt. View Road traffic wishing to turn left onto Jackson Boulevard must turn prior to the intersection and wait at a stop sign for a gap in Jackson Boulevard traffic. Southbound Mt. View Road traffic wishing to continue to westbound Jackson Boulevard is signal controlled, as is westbound Jackson Boulevard. Eastbound Jackson Boulevard traffic is not signalized and operates in a free flow condition. Across from the Mt. View Road leg of the intersection is an entrance to commercial property (noted as entrance B on the intersection layout sheets). This entrance acts essentially as another leg of the intersection. It is currently uncontrolled. There is an existing raised median island on Jackson Boulevard that blocks the west half of the entrance, making it difficult to navigate a left turn onto westbound Jackson Boulevard.

The intersection and the traffic control signals do not accommodate pedestrian traffic.

On-street parallel parking exists on the southeast side of Jackson Boulevard beginning at entrance B and continuing northeast to West Kansas City Street.

Estimated user costs, based on delay, are estimated to be \$252,320/year for the existing configuration. The estimated user costs were calculated using traffic counts taken on February 11, 2009 (4.3% trucks, 95.7% cars) and dollars/vehicle-minute values obtained from the South Dakota Department of Labor.

#### SAFETY/ACCIDENTS

The skew angle of Mt. View Road with Jackson Boulevard is severe being nearly 67 degrees from perpendicular. This poses a line-of-sight problem between southbound Mt. View Road traffic and westbound Jackson Boulevard traffic. Traffic signal displays for those two legs of the intersection are easily visible from both legs, creating motorist confusion.

Traffic exiting entrance B and wishing to go left onto Jackson Boulevard must wait for a gap in traffic and traverse around the east end of a raised median island. Likewise, exiting traffic must wait for a gap to cross Jackson Boulevard to Mt. View Road and then must wait again for a gap in northbound Mt. View Road traffic to turn right onto Mt. View Road.

Pedestrian facilities, including pedestrian signals, crosswalks, curb ramps and connecting sidewalk do not exist at this intersection today for pedestrian traffic.

Accident history was collected from the SD Office of Public Safety and the Rapid City Police Department for a four year period starting in 2005. The accident rate from this history calculated to be 1.3 accidents per million vehicles passing through the intersection. An accident rate of 1.8 or greater is needed for the use of safety funds to make improvements at an intersection. No fatalities from vehicular accidents were reported.

The breakdown of the accidents reported in the four year period is as follows:

- 3 of the 54 accident reports (5%) could be attributed to driver confusion/geometrics.
- 6 of the 54 accident reports (12%) involved the entrance at station 136+47 Rt (A).
- 17 of the 54 accident reports (31%) involved rear-end collisions (most typical collision at a signalized intersection). These accidents were wide spread throughout the intersection and not related to one specific movement or leg of the intersection.
- 28 of the 54 accident reports (52%) involved animal hits or were weather related.

The intersection of W. Main & Sturgis Road in Rapid City has a near perpendicular configuration similar to what is being planned with the Jackson Boulevard / Mt. View Road intersection improvements. At that intersection, the accident rate is 0.83 accidents per million vehicles passing through the intersection. Assuming that a similar rate will result at the Jackson Boulevard / Mt. View Road intersection, the accident rate would drop by 64%, or 5 accidents per year.

### OPTION 1

This option minimally changes the intersection from its existing configuration. The changes include removing the raised median islands on Jackson Boulevard, and increasing the size of the raised pork chop island on the north leg of the intersection to pull the southbound Mt. View Road to eastbound Jackson Boulevard left turn movement into the footprint of the intersection. The overall size of the intersection increases greatly as westbound Jackson Boulevard motorists must travel over 250 feet to pass the point where southbound Mt. View Road motorists merge into the intersection. This creates a long clearance time for the westbound Jackson Boulevard motorists and lowers the level of service significantly from its current state.

Curb & gutter returns and a small pork chop island would be installed at entrance B. These improvements would be constructed to reduce conflict points by forcing traffic exiting the entrance to turn right only. This is not a favorable situation as the exiting motorists would not be able to see the signal displays of the other legs of the intersection.

There are no impacts to the existing parallel parking on the east side of Jackson Boulevard.

Estimated cost to construct: \$214,400

Estimated user costs: \$366,610/year (\$14.66 M for forty years)

\* Not added to the user costs is reconfiguring entrance B to right-out only.

### Advantages

- No changes to the alignments of Jackson Boulevard or Mt. View Road and consequently no significant removal of pavement on Mt. View Road that was constructed in 2006.
- Eliminates a conflict point by eliminating the left turn out of the entrance B.
- No additional right-of-way needed.
- Lowest cost to construct.

### Disadvantages

- Does nothing to reduce the existing skew angle of the intersection.
- Westbound Jackson Boulevard PM peak traffic backs through Fulton Street.
- An excessive clearance time is necessary for westbound Jackson Boulevard to travel the width of the intersection, requiring a long clearance interval, which can lead to drivers violating the red or stop indication.
- Impacts the customers of the businesses served by entrance B by causing those wishing to travel westbound to take a more circuitous route through the Baken Park area (this condition generally exists today with the existing raised median island).
- Lower overall performance for traffic flow with slightly longer delay.

# OPTION 1a

This option is the same as option 1, except that entrance B would be signal controlled. It was determined that detector loops for entrance B approach would be unreliable due to parking maneuvers and camera detection would be necessary. The intersection would act as a 4-leg intersection.

There are no impacts to the parallel parking on the east side of Jackson Boulevard.

Estimated cost to construct: \$230,360

Estimated user costs: \$442,820/year (\$16.91 M for forty years)

### Advantages

- No changes to the alignments of Jackson Boulevard or Mt. View Road and consequently no significant removal of the pavement on Mt. View Road that was constructed in 2006.
- No additional right-of-way needed
- Entrance B becomes a controlled access point to the intersection.

#### Disadvantages

- Does nothing to reduce the existing skew angle of the intersection.
- Westbound Jackson Boulevard PM peak traffic backs through Fulton Street.
- An excessive clearance time is necessary for westbound Jackson Boulevard to clear the intersection, which can lead to drivers violating the red or stop indication.
- Lower overall performance for traffic flow with slightly longer delay.

### OPTION 2

The intent of this option is to intersect Mt. View Road into Jackson Boulevard at a less severe skew angle than what exists today. A curve meeting a 35 mph design speed was used to reduce the skew angle to 42 degrees. This configuration does not achieve a perpendicular intersection, but is a compromise to the existing conditions versus the need to acquire the entire corner property and business sandwiched between Mt. View Road and Jackson Boulevard and the need to reconstruct a significant amount of Mt. View Road pavement which was reconstructed in 2006.

Approximately 9006 SqFt of additional right-of-way from the property sandwiched between Mt. View Road and Jackson Boulevard would be needed to construct this option. Entrance D on Mt. View Road would be closed due to the new geometrics.

Two raised median islands are laid out for Jackson Boulevard forcing entrance B to become a right-in/right-out entrance. Clear View Lane (C), would also become right-in/right-out.

Widening of Jackson Boulevard would need to occur to accommodate these islands and the eastbound Jackson Boulevard to northbound Mt. View Road left turn lane. This widening would eliminate the parallel parking directly across from the Mt. View Road leg of the intersection.

Existing sidewalk on the west side of Mt. View Road would remain. A new sidewalk would be constructed connecting this sidewalk with the intersection.

An raised median island would be constructed on Mt. View Road to protect crossing pedestrians and to better channel traffic. At this island location northbound Mt. View Road would be one lane only, transitioning to two lanes immediately downstream of the island.

Entrance F on Jackson Boulevard will be reconstructed.

Estimated cost to construct: \$622,840

\* Not included in cost is compensation for loss of entrance D. Loss of on-street parking between entrances B and C is non-compensable.

Estimated user costs: \$331,610/year (\$13.26 M for forty years)

\* Not included in user costs are entrances B and C limited to right-in/right-out only resulting in longer travel times.

### Advantages

- Improved visibility of signal heads.
- Reduces the existing skew angle by approximately 25 degrees.
- Curve would allow for 35 mph speeds and greater line of sight to the oncoming signals.
- The elimination of the parallel parking in the intersection reduces conflict points.
- Improved accommodations for southbound Mt. View Road to eastbound Jackson Boulevard left turning vehicles
- Entrances B and C become right-in/right-out entrances reducing conflict points to the intersection.

### Disadvantages

- 2.9 times more costly to construct than option 1.
- Westbound Jackson Boulevard PM peak traffic backs through Fulton Street.
- Significant impact (ROW acquisition and entrance D closure) to the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- Loss of on-street parting between entrances B and C elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$134,568 to install in 2006.)
- An excessive clearance time is necessary for westbound Jackson Boulevard to clear the intersection, which can lead to drivers violating the red or stop indication.
- A long pedestrian phase is required for crossing Mt. View Road.
- Impacts the customers of the businesses served by entrance B Clear View Lane (C) by causing those wishing to exit westbound or enter from the north to take more circuitous routes.

# OPTION 3

This option is similar to option 2, except a curve meeting a 25 mph design speed was used and a near perpendicular condition was achieved. Only one northbound Mt. View Road through lane will be striped to accommodate the width needed for a semi truck to negotiate the curve.

Entrance B is eliminated. Control of access is included along the properties served by entrance B.

Less right-of-way (5474 SqFt) would be needed from the corner property than in option 2.

### Estimated cost to construct: \$522,920

\* Not included in the cost is compensation for acquiring Control of Access along the properties served by entrance B. Loss of on-street parking between entrances B and C is non-compensable.

Estimated user costs: \$302,900/year (\$12.12 M for forty years)

### Advantages

- Improved visibility of signal heads for vehicles.
- Nearly eliminates the existing skew angle.
- Eliminates parallel parking in the intersection reduces conflict points.
- Best level of service for 2009 and 2030 traffic.
- Crossing distances are shorter for vehicles and pedestrians and the conflict area within the intersection is less, thereby decreasing the potential for collisions.
- Entrance B is removed reducing conflict points to the intersection.

#### Disadvantages

- 2.4 times more costly to construct than option 1.
- Significant right-of-way impacts to the two properties served by entrance B (Control of Access). Right-of-way needed from the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- Loss of on-street parting between entrances B and C elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$107,112 to install in 2006.)
- Semi trucks need a lane and a half to negotiate the new curve on Mt. View Road.

### OPTION 3a

This option is conceptually identical to option 3. The difference being the intersection is located 40 feet farther southwest than option 3. Entrance B would be signalized.

Estimated cost to construct: \$464,420

\* Loss of on-street parking between entrances B and C is non-compensable.

Estimated user costs: \$521,500/year (\$20.86 M for forty years)

#### Advantages

- Improved visibility of signal heads for vehicles.
- Nearly eliminates the existing skew angle.
- Crossing distances are shorter for vehicles and pedestrians and the conflict area within the intersection is less, thereby decreasing the potential for collisions.

• Eliminates parallel parking in the intersection – reduces conflict points.

# Disadvantages

- 2.2 times more costly to construct than option 1.
- Signal operation requires split phasing for southbound and northbound vehicles; increasing overall intersection delay.
- Westbound Jackson Boulevard PM peak traffic backs through Fulton Street.
- Estimated user costs nearly \$21 million for forty years, which is more than double the \$10 million forty year estimated user costs for the existing configuration.
- Right-of-way needed from the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- Loss of on-street parting between entrances B and C elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$105,304 to install in 2006.)
- Semi trucks need wide lanes to negotiate the new curve on Mt. View Road. This may result in lane confusion during winter months when the pavement markings are covered by ice and snow.

# OPTION 3a-COA

Option 3a and 3a-COA are identical except that option 3a-COA incorporates Control of Access along the properties served by entrance B.

Estimated cost to construct: \$443,180

\* Not included in the cost is compensation for acquiring Control of Access along the properties served by entrance B. Loss of on-street parking between entrances B and C is non-compensable.

Estimated user costs: \$302,900/year (\$12.12 M for forty years)

### Advantages

- Improved visibility of signal heads for vehicles.
- Nearly eliminates the existing skew angle.
- Crossing distances are shorter for vehicles and pedestrians and the conflict area within the intersection is less, thereby decreasing the potential for collisions.
- Eliminates parallel parking in the intersection reduces conflict points.
- Entrance B is removed reducing conflict points to the intersection.

#### Disadvantages

- 2.1 times more costly to construct than option 1.
- Significant right-of-way impacts to the two properties served by entrance B (Control of Access). Right-of-way needed from the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- Loss of on-street parting between entrances B and C elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$105,304 to install in 2006.)
- Semi trucks need wide lanes to negotiate the new curve on Mt. View Road. This may result in lane confusion during winter months when the pavement markings are covered by ice and snow.

### OPTION 4

This option reconfigured the intersection to make the major through movement follow SD Hwy 44 from Jackson Boulevard onto Mt. View Road. The east leg of Jackson Boulevard would tee into SD Hwy 44.

Although this option will operate at an acceptable level of service, traffic analysis revealed that the westbound Jackson Boulevard queue length required to accommodate the PM peak extended to West Fulton Street

This option is not considered as a viable option, due to the unconventional configuration, shifting of the intersection to the east and longer queue lengths. Thus no estimated construction costs or estimated user costs were calculated.

#### OPTION 5

This option is conceptually identical to options 3 and 3a, except that a reverse "S" curve is included on Mt. View Road. The reverse curve is intended to allow the intersection to be located further southwest by shifting the alignment west, partially onto City of Rapid City owned property. Encroaching onto the City property will have negative impacts to 4(f) public lands, which would require mitigation.

The introduction of a reverse or "s" curve is not preferred by the Department. During winter time driving when the pavement marking may be covered by snow and ice, the general habit of drivers is to take a straight line rather than follow a curve. Doing so in this case would have southbound Mt. View Road to westbound Jackson Boulevard vehicles driving in the southbound Mt. View Road to eastbound Jackson Boulevard left turn lane. Likewise there is increased potential for southbound Mt. View Road traffic to over drive the first curve and cross over into the northbound traffic.

Located along the outer edge of the southerly curve is a large steel pole supporting a transmission power line. The power line was constructed within a utility easement in 2006 as a part of the Mt. View Road reconstruction project. The reverse curve was laid out to miss this power pole; however, winter time driving conditions and the reverse curve may increase the likelihood of vehicles leaving the roadway and crashing into the pole.

The raised center median defining the eastbound median will have to be extended back to the west approximately 92' to provide the same length of left turn lane as is provided for in option 3. This will essentially change entrance A to a right-in/right-out access point.

All of the sidewalk on the west side of Jackson Boulevard and Mt. View Road would be replaced between the entrance to the City's water treatment and the northerly tie-in point on Mt. View Road.

Entrances D and E will be reconstructed to match the new curb & gutter geometrics.

The Clarkson Mt. View Healthcare Facility has recently completed construction of a parking lot on the east side of their facility. Option 5 would require modification of this parking lot.

Estimated cost to construct: \$550,180

Estimated user costs: \$521,500/year (\$20.86 M for forty years)

# Advantages

- Nearly eliminates the existing skew angle.
- Eliminates parallel parking in the intersection reduces conflict points.
- Crossing distances are shorter for vehicles and pedestrians and the conflict area within the intersection is less, thereby decreasing the potential for collisions.
- Positions the intersection to be nearly aligned with entrance B.

# Disadvantages

- 2.6 times more costly to construct than option 1.
- Negative impacts to 4(f) public lands.
- To maintain the amount of eastbound Jackson Boulevard to northbound Mt. View Road left turn lane, the center raised median must extend across entrance A. This would change the entrance to right-in/right-out only.
- Westbound Jackson Boulevard PM peak traffic backs through Fulton Street.
- Signal operation requires split phasing for southbound and northbound vehicles; increasing overall intersection delay.
- Estimated user costs nearly \$21 million for forty years, which is more than double the \$10 million forty year estimated user costs for the existing configuration.
- Right-of-way needed from the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- One on-street parking spot between entrances B and C removed elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$90,567 to install in 2006.)
- Requires modifications to the Clarkson Mt. View Healthcare Facility parking lot.
- Minimum sight distance requirements for signal head visibility are not met for the southbound Mt. View Road approach with the reverse curve.
- Semi trucks need wide lanes to negotiate the new curve on Mt. View Road. This may result in lane confusion during winter months when pavement markings are covered by ice and snow.

# OPTION 5a

Option 5 and 5a are identical except that option 5a incorporates Control of Access along the properties served by entrance B.

Estimated cost to construct: \$528,940

\* Not included in the cost is compensation for acquiring Control of Access along the properties served by entrance B.

Estimated user costs: \$302,900/year (\$12.12 M for forty years)

# Advantages

- Nearly eliminates the existing skew angle.
- Eliminates parallel parking in the intersection reduces conflict points.
- Crossing distances are shorter for vehicles and pedestrians and the conflict area within the intersection is less, thereby decreasing the potential for collisions.
- Entrance B is removed reducing conflict points to the intersection.

### Disadvantages

- 2.5 times more costly to construct than option 1.
- 4(f) public lands negative impacts.
- To maintain the amount of eastbound Jackson Boulevard to northbound Mt. View Road left turn lane, the center raised median must extend across entrance A. This would change the entrance to right-in/right-out only.
- Significant right-of-way impacts to the two properties served by entrance B (Control of Access). Right-of-way needed from the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- One on-street parking spot between entrances B and C removed elimination of customer parking.
- Removal of Mt. View Road pavement. (Cost of \$90,567 to install in 2006.)
- Requires modifications to the Clarkson Mt. View Healthcare Facility parking lot.
- Minimum sight distance requirements for signal head visibility are not met for the southbound Mt. View Road approach with the reverse curve.
- Semi trucks need wide lanes to negotiate the new curve on Mt. View Road. This may result in lane confusion during winter months when pavement markings are covered by ice and snow.

### OPTION 6

This option has been designed to keep the predominant through movement on SD Highway 44. Jackson Boulevard east of Mt. View would intersect SD Highway 44 in a T configuration. Dual right turn lanes for eastbound vehicles are necessary to accommodate traffic volumes.

The intent was to design as large of a horizontal curve as possible was twofold. First the curve had to meet design speeds without having to introduce superelevation. Secondly the curve was to be flat enough to move the mainline roadway away from the businesses between entrance B and entrance C as far as possible. The steel pole supporting Black Hills Power & Light's transmission power line and the sign for the City's water treatment were two obstacles limiting the size of the curve. These two obstacles are not to be impacted. A horizontal curve with a 792 foot radius was selected. The intersection is far enough away from entrance B that the existing Jackson Boulevard on-street parking can remain.

Entrance A posed another challenge to the design of this layout. Leaving it as a full movement entrance meant that westbound left turn traffic would have to cross four lanes of traffic to make the turn. Additionally, the entrance itself is located within the dedicated right turn. While this is not unique to South Dakota, it does increase the potential for eastbound rear end crashes. It was ultimately decided to design the layout with a raised median the length of the right turn lanes and make entrance A a right in/right out movement. The operational performance of this option relies on the dual right turn lanes being unobstructed.

Entrance B is located within the westbound Jackson Boulevard left turn lanes and around the corner from the eastbound Jackson Boulevard right turn lanes. This increases the potential for rear end crashes for both turning movements, and confusion for westbound traffic not knowing whether or not a left turning vehicle is turning left through the intersection, or turning left into entrance B. It was ultimately decided to design the intersection layout with a raised median the length of the curve, thus making entrance B a right in/right out movement.

Ironically, while this intersection layout has good overall level of service, it has geometric and traffic flow related impacts that make it a less favorable option than other choices. First of all,

traffic patterns are not fully known; however, it was assumed that 20% of the traffic would not stay on Jackson Boulevard to downtown, but would instead make the through movement to Mt. View Road. Analysis of this change in traffic patterns indicated negative impacts to the intersection of Mt. View Road and Main Street and would increase the difficulty of traffic wishing to exit the Safeway parking lot. Secondly, the geometrics negatively impact the cone of vision of the signals for westbound Jackson Boulevard approaching the intersection. A supplemental signal for this leg would likely be needed in the southeast quadrant of the intersection. Finally, pedestrian indications for crossing the west leg of the intersection will require red signal display for all legs of the intersection, for the duration of the pedestrian interval.

Estimated cost to construct: \$650,070.

Estimated user costs: \$374,440/year (\$14.98 M for forty years)

\* Not included in user costs are entrances B and C limited to right-in/right-out only resulting in longer travel times.

### Advantages

- Best PM peak level of service for 2009 and 2030 traffic.
- Existing Jackson Boulevard on-street parking can remain.

### Disadvantages

- 3.0 times more costly to construct than option 1.
- Impacts the customers of the businesses served by the entrances A and B by causing those wishing to exit southbound and those wishing to enter from the north to take a more circuitous route.
- Removal of Mt. View Road pavement. (Cost of \$111,943 to install in 2006.)
- Significant impact (ROW acquisition and entrance closures D and E) to the property in the corner sandwiched between Jackson Boulevard and Mt. View Road.
- Westbound Jackson Boulevard signals do not fall within the vehicle cone of vision.
- Pedestrian movements create long delay for vehicular traffic flow.

# Appendix A

Intersection Layout Sheets















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# Appendix B

**Detailed Cost Estimates** 

# Option 1

			Unit	Total
Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	3368.56	SqYd	\$33.45	\$112,678.18
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	884.25	Ton	\$9.31	\$8,232.33
Asphalt Concrete Composite	12.00	Ton	\$98.89	\$1,186.68
Type B69.5 C&G (ft.)	597.00	Feet	\$19.07	\$11,384.79
8" Approach Pavement	40.78	SqYd	\$64.09	\$2,613.45
4" Median PCCP (sqyd)	485.78	SqYd	\$37.08	\$18,012.64
Sidewalk (sqft)	2928.00	SqFt	\$4.60	\$13,468.80
Type 1 Detectable Warnings	135.00	SqFt	\$37.15	\$5,015.25
Remove Concrete Pavement	533.56	SqYd	\$3.48	\$1,856.77
Unclassified Excavation (cuyds)	200.00	CuYd	\$2.16	\$432.00
Undercutting (cuyds.)	3368.56	CuYd	\$1.57	\$5,288.63
			Subtotal	\$180,169.53
Contingency	10.0%			\$18,016.95
PE	5.5%			\$9,909.32
CE	3.5%			\$6,305.93
				\$214,400.00

# Option 1a

A			Unit	Total
Description	Quantity	Unit	Price	Price
	,			
PCCP 9.5" (sqyds)	3404.22	SqYd	\$33.45	\$113,871.23
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	893.61	Ton	\$9.31	\$8,319.49
Asphalt Concrete Composite	0.00	Ton	\$98.89	\$0.00
Type B69.5 C&G (ft.)	564.00	Feet	\$19.07	\$10,755.48
8" Approach Pavement	40.78	SqYd	\$64.09	\$2,613.45
4" Median PCCP (sqyd)	421.11	SqYd	\$37.08	\$15,614.80
Sidewalk (sqft)	2908.00	SqFt	\$4.60	\$13,376.80
Type 1 Detectable Warnings	130.00	SqFt	\$37.15	\$4,829.50
Remove Concrete Pavement	533.56	SqYd	\$3.48	\$1,856.77
Unclassified Excavation (cuyds)	200.00	CuYd	\$2.16	\$432.00
Undercutting (cuyds.)	3404.22	CuYd	\$1.57	\$5,344.63
Additional signal for entrance (B)	1.00	Each	\$17,843.00	\$17,843.00
w/camera				
			Subtotal	\$194,857.16
Contingency	10.0%			\$19,485.72
PE	5.5%			\$10,717.14
CE	3.5%			\$6,820.00
				\$231,880.00

# Option 2

			Unit	Total
Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	7200.67	SqYd	\$33.45	\$240,862.30
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	1890.18	Ton	\$9.31	\$17,597.53
Asphalt Concrete Composite	0.00	Ton	\$98.89	\$0.00
Type B69.5 C&G (ft.)	1675.00	Feet	\$19.07	\$31,942.25
8" Approach Pavement	132.22	SqYd	\$64.09	\$8,474.12
4" Median PCCP (sqyd)	452.33	SqYd	\$37.08	\$16,772.52
Sidewalk (sqft)	5283.00	SqFt	\$4.60	\$24,301.80
Type 1 Detectable Warnings	120.00	SqFt	\$37.15	\$4,458.00
Remove Concrete Pavement	2704.89	SqYd	\$3.48	\$9,413.01
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	7200.67	CuYd	\$1.57	\$11,305.05
Additional ROW	9006.80	SqFt	\$17.50	\$157,618.95
			Subtotal	\$523,393.53
Contingency	10.0%			\$52,339.35
PE	5.5%			\$28,786.64
CE	3.5%			\$18,318.77
				\$622,840.00

# Option 3

Description	Quantity	Unit	Unit Price	Total Price
PCCP 9.5" (sqyds)	6747.89	SqYd	\$33.45	\$225,716.88
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	1771.32	Ton	\$9.31	\$16,491.00
Asphalt Concrete Composite	0.00	Ton	\$98.89	\$0.00
Type B69.5 C&G (ft.)	2021.00	Feet	\$19.07	\$38,540.47
8" Approach Pavement	111.00	SqYd	\$64.09	\$7,113.99
4" Median PCCP (sqyd)	62.00	SqYd	\$37.08	\$2,298.96
Sidewalk (sqft)	7100.00	SqFt	\$4.60	\$32,660.00
Type 1 Detectable Warnings	56.00	SqFt	\$37.15	\$2,080.40
Remove Concrete Pavement	2153.00	SqYd	\$3.48	\$7,492.44
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	6747.89	CuYd	\$1.57	\$10,594.19
Additional ROW *	5474.00	SqFt	\$17.50	\$95,795.00
			Subtotal	\$439,431.33
Contingency	10.0%			\$43,943.13
PE	5.5%			\$24,168.72
CE	3.5%			\$15,380.10
				\$522,920.00

\* Does not include costs to acquire Control of Access

# Option 3a

			Unit	Total
Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	6360.00	SqYd	\$33.45	\$212,742.00
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	1669.50	Ton	\$9.31	\$15,543.05
Asphalt Concrete Composite	0.00	Ton	\$98.89	\$0.00
Type B69.5 C&G (ft.)	1951.00	Feet	\$19.07	\$37,205.57
8" Approach Pavement	52.00	SqYd	\$64.09	\$3,332.68
4" Median PCCP (sqyd)	55.00	SqYd	\$37.08	\$2,039.40
Sidewalk (sqft)	5364.70	SqFt	\$4.60	\$24,677.62
Type 1 Detectable Warnings	88.00	SqFt	\$37.15	\$3,269.20
Remove Concrete Pavement	2116.67	SqYd	\$3.48	\$7,366.00
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	6360.00	CuYd	\$1.57	\$9,985.20
Additional signal for entrance (B) w/camera	1.00	Each	\$17,843.00	\$17,843.00
Additional ROW	3178.00	SqFt	\$17.50	\$55,615.00
			Subtotal	\$390,266.72
Contingency	10.0%			\$39,026.67
PE	5.5%			\$21,464.67
CE	3.5%			\$13,659.34
				\$464,420.00

# Option 3a-COA

			Unit	Total
Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	6360.00	SqYd	\$33.45	\$212,742.00
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	1669.50	Ton	\$9.31	\$15,543.05
Asphalt Concrete Composite	0.00	Ton	\$98.89	\$0.00
Type B69.5 C&G (ft.)	1951.00	Feet	\$19.07	\$37,205.57
8" Approach Pavement	52.00	SqYd	\$64.09	\$3,332.68
4" Median PCCP (sqyd)	55.00	SqYd	\$37.08	\$2,039.40
Sidewalk (sqft)	5364.70	SqFt	\$4.60	\$24,677.62
Type 1 Detectable Warnings	88.00	SqFt	\$37.15	\$3,269.20
Remove Concrete Pavement	2116.67	SqYd	\$3.48	\$7,366.00
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	6360.00	CuYd	\$1.57	\$9,985.20
Additional ROW	3178.00	SqFt	\$17.50	\$55,615.00
			Subtotal	\$372,423.72
Contingency	10.0%			\$37,242.37
PE	5.5%			\$20,483.30
CE	3.5%			\$13,034.83
				\$443,180.00

# Option 5

Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	8395.00	SqYd	\$33.45	\$280,812.75
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	2203.69	Ton	\$9.31	\$20,516.33
Asphalt Concrete Composite	5.00	Ton	\$98.89	\$494.45
Type B69.5 C&G (ft.)	2091.00	Feet	\$19.07	\$39,875.37
8" Approach Pavement	138.00	SqYd	\$64.09	\$8,844.42
4" Median PCCP (sqyd)	174.00	SqYd	\$37.08	\$6,451.92
Sidewalk (sqft)	9495.00	SqFt	\$4.60	\$43,677.00
Type 1 Detectable Warnings	80.00	SqFt	\$37.15	\$2,972.00
Remove Concrete Pavement	1820.44	SqYd	\$3.48	\$6,335.15
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	8395.00	CuYd	\$1.57	\$13,180.15
Additional ROW	466.43	SqFt	\$17.50	\$8,162.51
Additional signal for entrance (B)	1.00	Each	\$17,843.00	\$17,843.00
w/camera				
Modify Clarkson Parking Lot	1.00	LS	\$12,520.00	\$12,520.00
			Subtotal	\$462,333.05
Contingency	10.0%			\$46,233.30
PE	5.5%			\$25,428.32
CE	3.5%			\$16,181.66
				\$550,180.00

# **Option 5a**

Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	8395.00	SqYd	\$33.45	\$280,812.75
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	2203.69	Ton	\$9.31	\$20,516.33
Asphalt Concrete Composite	5.00	Ton	\$98.89	\$494.45
Type B69.5 C&G (ft.)	2091.00	Feet	\$19.07	\$39,875.37
8" Approach Pavement	138.00	SqYd	\$64.09	\$8,844.42
4" Median PCCP (sqyd)	174.00	SqYd	\$37.08	\$6,451.92
Sidewalk (sqft)	9495.00	SqFt	\$4.60	\$43,677.00
Type 1 Detectable Warnings	80.00	SqFt	\$37.15	\$2,972.00
Remove Concrete Pavement	1820.44	SqYd	\$3.48	\$6,335.15
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	8395.00	CuYd	\$1.57	\$13,180.15
Additional ROW	466.43	SqFt	\$17.50	\$8,162.51
Modify Clarkson Parking Lot	1.00	LS	\$12,520.00	\$12,520.00
			Subtotal	\$444,490.05
Contingency	10.0%			\$44,449.00
PE	5.5%			\$24,446.95
CE	3.5%			\$15,557.15
				\$528,940.00

# Option 6

			Unit	Total
Description	Quantity	Unit	Price	Price
PCCP 9.5" (sqyds)	8713.00	SqYd	\$33.45	\$291,449.85
Dowel Bars (each)		Each	\$8.36	\$0.00
Gravel Cushion (tons)	2287.16	Ton	\$9.31	\$21,293.48
Asphalt Concrete Composite	17.30	Ton	\$98.89	\$1,710.80
Type B69.5 C&G (ft.)	2030.00	Feet	\$19.07	\$38,712.10
8" Approach Pavement	98.00	SqYd	\$64.09	\$6,280.82
4" Median PCCP (sqyd)	759.00	SqYd	\$37.08	\$28,143.72
Sidewalk (sqft)	8948.00	SqFt	\$4.60	\$41,160.80
Type 1 Detectable Warnings	90.00	SqFt	\$37.15	\$3,343.50
Remove Concrete Pavement	2250.11	SqYd	\$3.48	\$7,830.39
Unclassified Excavation (cuyds)	300.00	CuYd	\$2.16	\$648.00
Undercutting (cuyds.)	8713.00	CuYd	\$1.57	\$13,679.41
Additional ROW	5258.46	SqFt	\$17.50	\$92,023.11
			Subtotal	\$546,275.97
Contingency	10.0%			\$54,627.60
PE	5.5%			\$30,045.18
CE	3.5%			\$19,119.66

Appendix C

Traffic Analysis Summary

				:/veh), Interse			Q	ueue Lei	ngth (fe	et), Appr	oach L	OS	
Cycle Length	(sec)		9 Counts	2030 Fc		EE	3L	E	В	W	′B	SE	3R
		AM Peak	PM Peak	AM Peak	PM Peak								
Present	60	5.3, A		70 /		220	<u>В</u> В		A	100	A	80	B
	60			7.9, A	13.9, B	340 340	В		A	140 360	В	140 240	В
	70		13.4, B		10.0, D	200	С	Free Flow	A	360	В	240	С
	75							е Ц					
	80							Fre					
	90 100												
	110												
Option 1	70	13.6, B				120	А	580	В	180	С	80	С
Option		13.0, D	23.6, C			120	B	160	A	620	D	230	C
	75			14.8, B		240	В	360	A	260	D	120	С
	80		00.0.0			100		100		0.40	0	000	
	90 100		22.2, C		32.4, C	120 280	B C	160 180	A A	640 780	C E	280 320	B D
	110				30.1, C	300	C	180	A	800	D	340	B
Option 1A		14.3, B	·			120	А	580	В	160	В	120	С
option in	70	1 1.0, D	34.7, C			100	B	140	A	640	C	380	E
	75			14.3, B		260	В	340	Α	180	В	240	С
	80												
	90	12.9, B				140	A	600	A	200	В	140	С
	100	12.0, D	27.1, C			100	B	160	A	700	D	380	D
	110				33.5, C	360	D	180	А	680	D	500	D
Option 2	70	11.7, B				120	А	520	В	160	С	80	С
	10		40.4.5			100							
	75		18.1, B	12.7, B		100 260	B	140 340	A A	520 240	C C	240 120	C C
	80			12.7, D		200	D	340	A	240	0	120	
	90												
	100				27.4, C	300	С	180	A	720	D	320	D
	110												
Option 3		8.0, A				100	Α	400	Α	160	В	80	Α
Option 3A - COA	70		16.5, B	07 ^		80	B	120	A	500	C	220	B
Option 5A			20.4, C	8.7, A		200 100	A B	280 140	A A	180 580	B C	160 220	B B
	75		2011, 0	12.0, B		240	B	340	A	240	C	120	C
	80												
	90				21.9, C	260	C	140	A	560	C	320	B
	100				23.5, C 26.6, C	280 280	D D	160 160	A A	620 720	C D	400 300	B C
	110									0			
Option 3A		21.0, C				160	В	760	С	160	В	100	В
Option 5	70												
	75												
	80 90		27.0.0			160	С	200	Λ	640	<u>^</u>	240	С
	90		27.0, C			160	U	200	A	640	С	340	
	110				32.5, C	360	D	200	Α	760	D	400	С
	ΠU			32.4, C		500	D	600	В	280	D	380	Е
						-							

# Jackson Boulevard & Mountain View Road

			Intersection		Queue Length (feet), Approach LOS									
	Cycle Length	n (sec)	02/11/09 Counts		2030 F	2030 Forecasts		NB		EB	۱۸/	DI	S	
			AM Peak	PM Peak	AM Peak	PM Peak		IND		ED	WBL		3	D
C	Option 4	70												
		75												
		80								Ň				
		00	17.4, B					380	В	Flo	160	В	100	В
		90			179 B		1 1	540	B	е	220	C	160	B

			11.0, D		010		Φ	220	•	100	U
	100						Ц				
	110	25.1, C			300	С		600	С	280	С
	110			25.9, C	740	С		500	С	360	С

		Intersectio	on Delay (sec	/veh), Interse	ection LOS		Q	ueue Lei	ngth (fe	et), Appr	oach L	OS	
Cycle Lengt	h (sec)	02/11/09	9 Counts	2030 Fo	orecasts	Е	R	EE		W	RI	9	B
	, ,		PM Peak	AM Peak	PM Peak	L	D			vv	DL	5	D
Option 6		11.2, B				220	В	340	А	140	В	60	В
	70		16.6, B			160	С	80	А	440	С	220	В
	70			12.4, B		280	С	240	А	180	С	120	А
					18.5, B	300	С	100	А	460	С	240	В
	75												
	80												
	90												
	100												
	110												

Cycle lengths for each time period were chosen based on the least amount of overall intersection delay. Various cycle lengths are given to indicate how cycle length affects overall intersection delay. Some cycle lengths were analyzed more than once for the same time period to show the effects of different phasing splits.

Option 1A reconfiguration of the intersection involves minimal change to the intersection. These changes include removing the raised median islands on Jackson Blvd, and increasing the size of the raised pork chop island and signalizing approach B.

# **Intersection Operation**

	Intersection Delay	Intersection LOS
	(sec/veh)	
AM Peak	12.9	В
PM Peak	27.1	С
2030 AM Peak Forecast	14.3	В
2030 PM Peak Forecast	33.5	С

A 3 phase operation at the intersection yields the following;

Option 1A levels of service (LOS) summaries are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix A**.

Option 1A requires an excessive clearance time for westbound Jackson Blvd to clear the intersection with Mountain View Rd. Long yellow and red change intervals, greater than 6sec, typically encourage drivers to use the yellow and red as part of the green interval (red light running). Calculated clearance time for westbound thru movement is 8.63 sec (3.57 sec yellow and 5.06 sec red). A clearance time of either 8.5 or 9 sec may be used and neither is recommended for signal operation. A clearance time of 9 sec was used for analysis.

Option 1A reconfiguration performs at a lower LOS than the existing operation. Existing operation estimation is summarized below and LOS summaries are in **Appendix B.** 

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	5.3	А
PM Peak	13.4	В

# **Intersection Queue**

Option 3 major movements at the intersection of Jackson Blvd/ Mountain View Rd are east/westbound thru and southbound right. Queue lengths were estimated for the movements.

	Eastbound	Eastbound	Westbound	Southbound
	Left (Ft)	Thru (Ft)	Thru (Ft)	Right (Ft)
AM Peak	140	600	200	140
PM Peak	100	160	700	380
2030 AM Peak	260	340	180	240
Forecast				
2030 PM Peak	360	200	680	500
Forecast				

Queues were estimated from the 95<sup>th</sup> percentile back of queue Highway Capacity Software (HCS) model rounded to the nearest whole number. A car length of 20' was used.

Region and City staff recommends 200' of storage for the eastbound left lane. Although 2030 forecast peak periods have an estimated queue length greater than 200', it is felt that drivers will continue on Jackson Blvd rather than enter the queue.

The intersection of Jackson Blvd/Fulton St is 660' west of the Jackson Blvd/ Mountain View Rd intersection. Westbound thru traffic will queue through the intersection in the during the existing and 2030 forecasted PM peak period.

# Pedestrian Impact

Pedestrians will be accommodated at the intersection of Jackson Blvd/ Mountain View Rd when present. All vehicles must come to a stop at the intersection to allow for pedestrian crossing north/south for design purposes. (*Logic statements in the traffic signal controller would allow for only the appropriate phase to be stopped.*) Northbound and southbound thru vehicles will be allowed to travel with pedestrians crossing north/south at the intersection. A walking speed of 3.5 ft/s and pedestrian start up time of 7 seconds was used.

Pedestrian actuated signals are very difficult to simulate and cannot be simulated with HCS. Assuming pedestrian activity occurred each cycle during the peak periods; estimated pedestrian effects on intersection LOS are shown.

	Intersection Delay	Intersection LOS
	(sec/veh)	
AM peak period ped-xing <sub>E/W</sub>	12.9	В
AM peak period ped-xing <sub>N/S</sub>	20.1	С
PM peak period ped-xing <sub>E/W</sub>	27.1	С
PM peak period ped-xing <sub>N/S</sub>	49.4	D

Levels of service (LOS) with pedestrian time accommodations are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix C**. These estimations

were calculated only for the purpose indicating potential queuing problems and are not intended to be used to describe the LOS at the intersection. The estimations indicate that the westbound thru lanes will have additional queuing during the PM peak period when pedestrians are crossing north/south (opposing westbound thru vehicles).

Due to the longer cycle length (100s) at this intersection, pedestrians crossing east/west will not affect either the AM or PM peak periods. No additional time is needed to the east/westbound phase to accommodate pedestrians. Option 1A performs at an acceptable intersection LOS when crossing north/south during the AM and PM peak periods, but the westbound thru and southbound right queues will increase.

The back of queue was estimated for random pedestrian calls by adding the HCS computed average queue for 3 phase operation to the average queue calculated for a cycle when a pedestrian phase is actuated and multiplying the sum by 2.0 in the AM and 1.6 in the PM. A vehicle length of 20' was assumed.

During the AM peak period the westbound thru is estimated to queue 360' and southbound right 280' when accommodating pedestrians crossing north/south (opposing eastbound thru vehicles). The westbound thru is estimated to queue 1100' and the southbound right 620' in the PM peak period.

The distance from the intersection to Fulton St is 660'. Westbound vehicles will queue through the intersection of Jackson Blvd/Fulton St during the PM peak period when accommodating for pedestrians.

# **Adjacent Intersection Impact**

Option 1A reconfiguration would not impact nearby intersections.

Option 3 reconfiguration of the intersection involves realigning the north leg of Mountain View Rd to intersect perpendicular to Jackson Blvd, forming a T-intersection .

# **Intersection Operation**

A 3 phase operation at the intersection yields the following;

	Intersection Delay	Intersection LOS
	(sec/veh)	
AM Peak	8.0	А
PM Peak	16.5	В
2030 AM Peak Forecast	8.7	А
2030 PM Peak Forecast	23.5	С

Option 3 levels of service (LOS) summaries are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix A**.

Option 3 reconfiguration performs similar to the existing operation. Existing operation estimation is summarized below and LOS summaries are in **Appendix B**.

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	5.3	А
PM Peak	13.4	В

# **Intersection Queue**

Option 3 major movements at the intersection of Jackson Blvd/ Mountain View Rd are east/westbound thru and southbound right. Queue lengths were estimated for the movements.

	Eastbound	Eastbound	Westbound	Southbound
	Left (Ft)	Thru (Ft)	Thru (Ft)	Right (Ft)
AM Peak	100	400	160	80
PM Peak	80	120	500	220
2030 AM Peak	200	280	180	160
Forecast				
2030 PM Peak	280	160	620	400
Forecast				

Queues were estimated from the 95<sup>th</sup> percentile back of queue Highway Capacity Software (HCS) model rounded to the nearest whole number. A car length of 20' was used.

Region and City staff recommends 200' of storage for the eastbound left lane. Although 2030 forecast peak periods have an estimated queue length greater than 200', it is felt that drivers will continue on Jackson Blvd rather than enter the queue.

# Pedestrian Impact

Pedestrians will be accommodated at the intersection of Jackson Blvd/ Mountain View Rd when present. All vehicles must come to a stop at the intersection to allow for pedestrian crossing north/south for design purposes. (*Logic statements in the traffic signal controller would allow for only the appropriate phase to be stopped.*) Northbound and southbound thru vehicles will be allowed to travel with pedestrians crossing north/south at the intersection. A walking speed of 3.5 ft/s and pedestrian start up time of 7 seconds was used.

Pedestrian actuated signals are very difficult to simulate and cannot be simulated with HCS. Assuming pedestrian activity occurred each cycle during the peak periods; estimated pedestrian effects on intersection LOS are shown.

	Intersection Delay (sec/veh)	Intersection LOS
AM peak period ped-xing <sub>E/W</sub>	7.4	А
AM peak period ped-xing <sub>N/S</sub>	41.0	D
PM peak period ped-xing <sub>E/W</sub>	15.5	В
PM peak period ped-xing <sub>N/S</sub>	86.9	F

Levels of service (LOS) with pedestrian time accommodations are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix C**. These estimations were calculated only for the purpose indicating potential queuing problems and are not intended to be used to describe the LOS at the intersection. The estimations indicate that the westbound thru lanes will have additional queuing during the PM peak period when pedestrians are crossing north/south (opposing westbound thru traffic).

The back of queue was estimated for random pedestrian calls by adding the HCS computed average queue for 3 phase operation to the average queue calculated for a cycle when a pedestrian phase is actuated and multiplying the sum by 1.6. A vehicle length of 20' was assumed.

During the AM peak period the eastbound thru is estimated to queue 780', westbound 300' and southbound right 160' when accommodating pedestrians crossing north/south (opposing eastbound thru traffic). The westbound is estimated to queue 960' and the southbound right 420 in the PM peak period.

The distance from the intersection to Fulton St is 660'. Westbound vehicles will queue into the intersection of Jackson Blvd/Fulton St during the PM peak period when accommodating for pedestrians.
Option 6 reconfiguration of the intersection involves converting the west leg of Jackson Blvd to a northbound movement. In this configuration, the east leg of Jackson Blvd would intersect Mountain View Rd forming a T-intersection.

#### **Intersection Operation**

A 20% diversion of traffic from Jackson Blvd to Mt View Rd was assumed based on the geometric change (10% diversion) and drivers currently not wanting to wait for the left turn phase to turn onto Mt. View Rd (10% diversion).

A 2 phase operation at the intersection yields the following;

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	6.5	А
PM Peak	12.3	В
2030 AM Peak Forecast	8.1	А
2030 PM Peak Forecast	13.0	В

Although a protected southbound left is not needed, it was analyzed. Adding protected/permissive phase changes the intersection to the following;

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	10.2	В
PM Peak	14.6	В
2030 AM Peak Forecast	11.0	В
2030 PM Peak Forecast	16.7	В

Option 6 levels of service (LOS) summaries with the 20% diversion are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix A**.

Option 6 reconfiguration performs similar to the existing operation. Existing operation estimation is summarized below and LOS summaries are in **Appendix B**.

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	5.3	А
PM Peak	13.4	В

### **Intersection Queue**

Option 6 major movements at the intersection of Jackson Blvd/ Mountain View Rd are westbound left and northbound right. Queue lengths were estimated for the movements.

Northbound thru queue lengths were calculated to prevent obstruction into the dual right turn lanes.

	Westbound	Northbound	Northbound	Southbound
	Left (Ft)	Thru (Ft)	Right (Ft)	Right (Ft)
Existing AM	120	200	160	80
Peak				
Existing PM	360	140	80	240
Peak				
2030 AM Peak	140	240	120	140
Forecast				
2030 PM Peak	360	220	80	240
Forecast				

Westbound left and northbound thru queues were estimated from the 95<sup>th</sup> percentile back of queue Highway Capacity Software (HCS) model rounded to the nearest whole number. A car length of 20' was used.

The HCS does not compute queue data for the NB right movement due to the lack of delay. The average queue was calculated and multiplied by 2.0 to approximate the 95<sup>th</sup> percentile back of queue. The average queue was estimated using the following equation;

 $Queue_{ave} = v / (3600/(C-g))$ 

v = volume of the movement in vehicles per hour per lane (60% of volume used) C = cycle length in seconds

g = effective green time in seconds (*the green time minus the start up lost time in each phase was used*)

The westbound queue will not affect traffic operations at the intersection of Jackson Blvd/Fulton St. The northbound inner right turn lane shall be 240' in length and have a taper of 120'. Total distance needed for dual right turn lanes is 360'. This may have potential negative impacts with business approaches.

# Pedestrian Impact

Pedestrians will be accommodated at the intersection of Jackson Blvd/ Mountain View Rd when present. All vehicles must come to a stop at the intersection to allow for pedestrian crossing east/west. (*Logic statements in the traffic signal controller would allow for only the appropriate phase to be stopped.*) Northbound and southbound thru vehicles will be allowed to travel with pedestrians crossing north/south at the intersection. A walking speed of 3.5 ft/s and pedestrian start up time of 7 seconds was used.

Pedestrian actuated signals are very difficult to simulate and cannot be simulated with HCS. Assuming pedestrian activity occurred each cycle during the peak periods; estimated pedestrian effects on intersection LOS are shown.

	Intersection Delay (sec/veh)	Intersection LOS
AM peak period ped-xing <sub>E/W</sub>	33.7	С
AM peak period ped-xing <sub>N/S</sub>	151.4	F
PM peak period ped-xing <sub>E/W</sub>	79.6	Е
PM peak period ped-xing <sub>N/S</sub>	22.6	С

Levels of service (LOS) with pedestrian time accommodations are given for the intersection of Jackson Blvd/ Mountain View Rd in **Appendix C**. These estimations were calculated only for the purpose of indicating potential queuing problems and are not intended to be used to describe the LOS at the intersection. The estimations indicate that the northbound right lanes will have additional queuing during the AM peak period when pedestrians are crossing north/south and the westbound left lanes will have additional queuing during the PM peak period when pedestrians are crossing east/west.

The back of queue was estimated for random pedestrian calls by adding the HCS computed average queue for 2 phase operation to the average queue calculated for a cycle when a pedestrian phase is actuated and multiplying the sum by 2.0 for the northbound right and 1.6 for the westbound left.

During the AM peak period the northbound right queue length is estimated at 420' when accommodating pedestrians crossing north/south (opposing northbound right vehicles). The westbound left queue is estimated at 720' when accommodating pedestrians crossing east/west (opposing westbound left vehicles) during the PM peak.

The distance from the intersection to Fulton St is 660'. Westbound left vehicles will queue into the intersection of Jackson Blvd/Fulton St during the PM peak period when accommodating for pedestrians.

### Adjacent Intersection Impact

The intersection of Main St/ Mountain View Rd was reviewed for impacts as a result of the 20% traffic diversion from Jackson Blvd to Mt View Rd. Existing intersection LOS is shown below and LOS summaries for current operation at the intersection of Main St/ Mountain View Rd are in **Appendix D**.

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	29.6	С
PM Peak	46.1	D

Lane group performance on the north approach of the intersection is as follows (delay (sec/veh), LOS; queue)

	Left	Thru	Right
AM Peak	23.4, C 48'	36.0, D 218'	22.9, C 226'
PM Peak	71.0, E 190'	39.7, D 226'	22.9, C 220'

Jackson Blvd/Mt View existing AM Peak/PM Peak eastbound thru movement volume is 1720/680 veh/hr.

Distribution of the northbound approach volumes at the intersections of Main St/Jackson Blvd and Main St/ Mountain View Rd. are as follows;

	Left	Thru	Right
Main St/Jackson Blvd	1.5/6%		<u>98.5/94%</u>
Main St/Mt View Rd	12/20%	53/48%	35/31%

Since the intersection of Main St/Jackson Blvd is predominantly right traffic, it was estimated that 100% of the diversion due to the geometric change will turn right at the intersection of Main St/ Mountain View Rd. The volume splits at Main St/ Mountain View Rd were applied to the diversion due to drivers not wanting to wait for the left turn phase to turn onto Mt. View Rd. Estimated approach volumes increases at the intersection of Main St/ Mountain View Rd. from the diversion are as follows;

	Left	Thru	Right
Main St/Jackson Blvd	0/0		172/68
Main St/Mt View Rd	21/27	91/65	60/42

Existing volumes at the intersection of Main St/ Mountain View Rd are as follows;

	Left	Thru	Right
AM Peak	60	412	280
PM Peak	168	376	248

Volumes were adjusted to review the intersection of Main St/ Mountain View Rd for impacts caused by the diversion as follows;

	Left	Thru	Right
AM Peak	85	510	515
PM Peak	195	445	360

Analyzing the intersection with the adjusted volumes gave the following results at the intersection of Main St/ Mountain View Rd;

	Intersection Delay (sec/veh)	Intersection LOS
AM Peak	30.9	С
PM Peak	46.4	D

Lane group performance on the north approach of the intersection is as follows (delay, LOS; queue)

	Left	Thru	Right
AM Peak	23.4, C 68'	35.5, D 270'	36.8, D 508'
PM Peak	70.1, E 238	43.2, D 306'	27.9, C 370'

LOS Summaries with the adjusted volumes for the intersection of Main St/ Mountain View Rd are included in **Appendix D**.

The 20% diversion of traffic from Jackson Blvd to Mt View Rd increases the intersection delay and LOS for the AM peak period at Main St/ Mountain View Rd. Although LOS D is acceptable for design purposes during peak periods, the queue increase for the northbound right lane should be considered. The queue more than doubles in the AM peak period (282'increase) and significantly increases in the PM peak period (150' increase).

Appendix D

Public Meeting Comments

Meeting Minutes

# MEMORANDUM

TO: File

- FROM: Neil A. Schochenmaier, PE Engineering Supervisor
- DATE: August 3, 2010
- **SUBJECT:** Meeting Minutes



**RE:** Project Number: P 0044(129)42 PENNINGTON County PCN 00X9 SD44 (Jackson Blvd.) fm Rapid Creek to Mt View Rd in Rapid City Grading, Storm Sewer, C&G, Sidewalk, Lighting, Signals & PCC Paving

On July 21, 2010, Todd Seaman, Tom Horan, Dan Staton, Stacy Bartlett and I met with staff from the City of Rapid City – Bob Dominacak, Mary Bosworth, Stacy Titus, John Less, Vickie Fisher, Kip Harrington, Patsy Horton, Ted Johnson, Karly Halsted and Monica Heller.

The purpose of the meeting was to present Option 6 Jackson Blvd/Mt. View intersection reconfiguration layout and to gather input from City staff.

Meeting convened at 11:05 MDT.

- Introductions were made.
- The history of the need to make improvements to the intersection was discussed.
- All reconfiguration layout options were reviewed.
- Discussion of Option 6
  - Left-in / left-out conflicts of the Advanced Chiropractic/Rausch Monuments shared entrance were discussed. The left-out movement looks to be extremely difficult to make and a driver waiting to make the movement, may get impatient waiting to get out and cause a crash. The left-in movement will negatively impact the WB Jackson Blvd traffic as a driver waits for a gap in the EB Jackson Blvd traffic. It was suggested that a raised median be constructed to restrict the entrance to right-in / right-out only movements.
  - Option 6 is better for getting through trucks to Omaha street.
  - There was concern about EB Jackson Blvd traffic having dedicated signals containing right turn arrows and that the red arrow is not as visible as a red ball. Also, there was concern that the right turning drivers would not yield to pedestrians in the crosswalk (N-S Jackson to Mt. View pedestrian movement).
  - The left turn movement into the ProMotion Entrance crosses 4 lanes of traffic and is located in the right turn lane taper and lanes. It was suggested that a raised median be constructed on SD44 to restrict the entrance to right-in / right-out movements.
  - City staff asked if the southerly E-W pedestrian crosswalk could be eliminated. This would benefit vehicle traffic, but to be ADA compliant, physical barriers would have to be constructed. It would also force pedestrians to cross the arterial roadways

twice if they were attempting to get from the west side of Jackson Blvd to the east side of Jackson Blvd.

- The individual traffic signal cones of vision were reviewed WB Jackson cone of vision is limited until a driver is very near the intersection. A near side signal will be needed. Additionally, WB Jackson vehicles will see SB Mt.View signal indications.
- Discussion of Option 3
  - Should EB to NB dual lefts be constructed to accommodate future expansion of Mt. View Road and Omaha Street?
  - Staff expressed some concern for the single NB lane on Mt. View w/in the intersection (curve).
  - Should there be EB Jackson to NB Mt. View all traffic type connectivity (should there be a bike lane)?
  - New sidewalk should be constructed adjacent to the new intersection on the west side of Jackson Blvd and Mt. View Rd.
  - The individual traffic signal cones of vision were reviewed SB Mt. View cone of vision is limited until a driver is near the intersection. Is a near side signal needed?

Meeting adjourned at 12:35 MDT.

From: trvictory [trvictory@bellsouth.net]

Sent: Thursday, October 07, 2010 5:11 AM

To: Horan, Tom

Subject: Rapid City intersection at Jackson Blvd and Mt. View

I am writing concerning proposed changes to the intersection at Jackson Blvd. and Mt. View Road in Rapid City. This intersection would be a good candidate for change if it wasn't working, BUT IT IS!

Crosswalks are a concern in areas where there are businesses. I have personally been at that intersection and have had occasion to cross the street on foot, which can be done at a crosswalk just a short half block away. By the way, in your study of this intersection, were pedestrians even counted? What are the statistics for pedestrian traffic?

Please do not change the intersection. If you MUST change it, please use option #6.

Thank you!

Theresa and John Victory



Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer

PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us



# WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

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Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us



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#### WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

#3

Thuks for explain over <u>cz</u> conc 100 what current, prove would to the 20 hest main the flic sheald Stay i dea I bolive ackeous on ersy soulting !'-Not an Wes Storm Date: 9 - 13-Name: 3702 monijuise Da Address:

Written testimony will be included in the meeting record. Please submit comments by

Friday, Sept. 17, 2010, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us



#### WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

option 3. I would like iones open Want butiness will fail if or closed during ken ar vould like east Bourson Struction, there a constant untesi have green shide from South bound lef Jackson Jurning onto Mt Viewdo not Stop nant have to 0 Fast Sou C the ight changes IME NI View vehicle Unless they 0 S tera on a cross. urn pedetrian waiting 40 Mike Stevenson Name: Date: 31 Aug 2313 Jackson Address:

Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us

From:	Sandal, Kristi
Sent:	Wednesday, September 01, 2010 10:09 AM
То:	Horan, Tom
Subject:	FW: Jackson/Mt.View proposal

-----Original Message-----From: jwshort@rap.midco.net [mailto:jwshort@rap.midco.net] Sent: Wednesday, September 01, 2010 11:06 AM To: Sandal, Kristi Subject: Jackson/Mt.View proposal

#### Sirs:

I was not able to attend the meeting at Meadowbrook School due to other work obligations. Upon reading the RC Journal this morning I was encouraged to give my opinion.

I drive this route, somtimes several times a day, as I live off off Sheridan Lake road. I have done this for Most of the four years we have lived in Rapid City. From the sound of this - it sounds like an attempt to fix something that isn't broken. I have at no time felt that the traffic flow at the intersection of Mt View and Jackson was a problem. I have lived in the Dallas/Ft. Worth area and have driven in other large metropolitan areas. The traffic at that intersection comes no where close to the traffic problems I have experienced in other areas. In fact the numbers mentioned in the newspaper aritcle would be per-hour numbers in some of these cities. There are times when the intersection might be a little congested but I have never had to wait at the back of the pack through several light-cycles to make it through the intersection. I have experienced that inconvenience at W. Main and Mt. View.

Let me re-emphasize my point. I don't believe that that intersection (Mt. View and Jackson) is a problem. The traffic lights at the intersection do their job of controlling traffic flow. I have never witnessed an accident at that intersection. I could forsee an accident where someones in-attention might cause them to rear-end another driver. For those of us who are paying attention to our drive ( and not texting or talking on the cell phone) will have no problem with the odd combination of roads at that intersection.

Opinion - It appears that any attempt to change this interection is the result of some bureaucrat who doesn't use these streets to fix somthing taht isn't broken. DON'T WASTE OUR TAX DOLLARS ON THIS INTERSECTION.

Respectfully submitted Will Short

From:Horan, TomSent:Wednesday, September 08, 2010 4:53 PMTo:'Barbra Jo Schreier'Subject:RE: Jackson

Barbra Jo, thanks for your comments.

I am uncertain of the communication that the Audio business had with DOT, could have been me for all I know. It is certainly possible that they were told that they would be unaffected based on the plans that existed at the time.

Within the DOT and with City staff, we did briefly discuss a roundabout. However SD has no roundabouts that accommodate two lanes each direction of travel, and we didn't want to experiment with an intersection of this magnitude. Our design staff also had concerns with a roundabout from the standpoint on not having similar traffic volumes on each leg. Others in the department would be far more versed than me regarding the technical reasons.

I didn't understand you to declare a preference for one design over the other. Is that correct?

Tom Horan, PE SD Dept. of Transportation Office (605)394-1631, Fax (605)394-1904 PO Box 1970, Rapid City, SD 57709-1970

----Original Message----From: Barbra Jo Schreier [mailto:gschreier@earthlink.net] Sent: Wednesday, September 08, 2010 1:36 PM To: Horan, Tom Subject: Jackson

Dear Mr. Horan-

Thanks for the well managed meeting last Tues. at Meadowbrook. It was good to hear the ideas and concerns of the community. Please accept my apology for this tardy response. We do not have Internet access at home.

First, I would like to say I regret the problem of parking for the businesses of concern. However-there never has been much parking on Jackson and as noted by a former business owner--it's a dangerous deal to open a car door and step into thru-traffic. I do wonder why the one proprietor was informed no changes were likely when he called the city prior to purchase. That sounded like a a very poor lack of communications. It is a logic step to keep ideas flowing between participating offices. And that made me wonder why there was no one from EMT to express their needs. Please pardon me if I simply missed some of the comments.

We borrow our todays from our children's tomorrows. Some sacrifices will have to be made. That is the nature of the change. Where those sacrifices are made is the tough call. It seems we ought to be able to compensate those who will be forced to relocate. Even tho the needs are apparent, someone will end up being the bad guy--and he is not.

We must have bike lanes. I have spoken with several cyclists since the meeting and many have said that when the lanes come available they will be well used. Because they are not in existence, most cyclists prefer not to do combat rides to work. RC is a recreational area and many residents liver here because of this. They therefore would relish the opportunity to commute. (I work in 2 gyms so I have a fairly good sample of opinions...oh, we do not own bicycles, we simply honor the need. Our taxes would be happy to go there.)

Finally, discussion at the meeting did not allow me an opening to inquire about considering a rotary--roundabout, for the Mt. View intersection. I drive this 2 or 3 times aday and after my first terrifying whiz thru one in Boston, I developed a real respect for their efficient method of traffic flow. Has this been considered?

THanks again for your courteous and dilligent work.

Bjo Schreier



# WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

I attended the DOT public meeting on August 31 concerning the Jackson Blvd-Morning View intersection and have reviewed the material provided on line. I have several comments concerning Option 3 and 6.

- Any plan to send more traffic into the Mountain View—Main Street intersection is a very bad idea.
- Looking at the photo for Option 3 there appears to be space for additional parking in the Peerless Tyre Co parking lot. Would it be possible for DOT to reach some agreement with them to stripe the lot and make use of the extra spots. The new crosswalks go directly from this parking lot to the front doors of the businesses across the street.
- Anything that can be done to speed the completion of this project is a good idea.

Bruce Curington 3120 Iris Drive, Rapid City, SD 57702 605-484-2210 September 2, 2010

Written testimony will be included in the meeting record. Please submit comments by

Friday, Sept. 17, 2010, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us



PASTON JOUES - BETHEL BAPTIST. CONSIDER OVER PASS AND RAMPS.

From:Brenna C. Proczko [i8brenna@gmail.com]Sent:Thursday, October 07, 2010 11:20 AMTo:Horan, TomSubject:Jackson Blvd. ProjectDear Mr. Horan:

Recently it came to my attention that SD DOT is evaluating the intersection of Jackson Blvd. and Mountain View Rd. in west Rapid City. I hope that you reconsider the desire to change the intersection design.

I grew up in Rapid City and come home on a regular basis to visit my family there. At their behest, I have reviewed the proposed changes currently being considered, and have come to the conclusion that any of these changes would be a waste of the taxpayers money, and more importantly, would place a tremendous negative economic burden on the businesses located near the intersection.

Have you considered the additional inconvenience to consumers trying to reach businesses at that interesection - and the detriment to their business as a result? It is not addressed anywhere on the website.

I've driven through and past this intersection thousands of times in my life, and it has never been a pedestrian area. It's a nice thought, but it's the wrong area to develop for that purpose. Where do you imagine the pedestrians are coming from - Baken Park? The ball fields? It doesn't seem to be a logical development.

Please adopt the do-nothing option with regards to the design of this intersection. If you must dosomething, I would suggest option 6.

Thank you for your time and consideration. I look forward to my next trip home, and hope to see the intersection the same as ever!

Brenna Proczko St. Paul, MN

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Remember: No matter how much you push the envelope, it'll still be stationery.



# WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

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Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us

From:Sandal, KristiSent:Wednesday, September 01, 2010 9:39 AMTo:Horan, TomSubject:FW: Jackson Blvd project

-----Original Message-----From: mitch@firstamsd.com [mailto:mitch@firstamsd.com] Sent: Wednesday, September 01, 2010 10:10 AM To: Sandal, Kristi Subject: Jackson Blvd project

As a daily traveler on jackson blvd., I believe it would be a mistake to ignore the traffic flow to and from town by trying to make Mountain view the thru lane. Option 6 looks like it would create all kinds of traffic flow and safety issues by ignoring actual traffic flow and attempting to redirect traffic down Mt. View where there are already conjestion issues.



# WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

on reda an Date: 8-31-10 Name: Address: 240 702

Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970

Tom.Horan@state.sd.us

WRITTEN TESTIMONY Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City Gre GLLCA NACON mth REI N. M. G.n 12, Ŝ The 42 SULCON Name: Date: S-3 Address:

Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970

Tom.Horan@state.sd.us



#### WRITTEN TESTIMONY

Project # P 0044(129)42 PCN 00X9 PENNINGTON COUNTY SD44 - From Rapid Creek to Mountain View Road in Rapid City

Option 3 is preferrible to option 6. It affects less people as far as traffic flow is concerned. Opt. 6 would create LARGIE problems for people from the east on Jackson or Mf. View coming being able to turn left into businesses not Blud Center. Opt 6 will also cause Jackson in forthic on Mt. View where there HUGE problems a problem esp. dealing wy the Safeway already 13 Gas Station. It can't handle being a through way. totally Opt. 6 is full of problems & is non-viable. Name: Lynne Mezzone Date: 8-31-10 Address: 1710 Palo Vine Dr. RC.

Written testimony will be included in the meeting record. Please submit comments by **Friday, Sept. 17, 2010**, to: SD DOT Region Office Tom Horan, Region Operations Engineer PO Box 1970 Rapid City, SD 57709-1970 Tom.Horan@state.sd.us

From:Martin Rausch [mwrausch@gmail.com]Sent:Sunday, October 17, 2010 6:19 PMTo:Horan, TomSubject:Project: P 0044(129)42 PCN # 00X9 Pennington CountyDear Mr. Horan,

I am writing you to voice my concerns regarding the proposed reconstruction of the intersection of Hwy 44/Jackson Blvd at Mountain View Road and its affect on local businesses. The document the SDDOT produced for the Public Meeting/Open House on August 31, 2010 states some possible benefits to local businesses. The three benefits discussed do not seem to apply to this situation. The first point regarding making sure that drivers can get in and out of businesses without being blocked by other traffic is not an issue at this intersection. A back up of traffic limiting drivers ability to enter or leave the businesses in this location simply does not happen. The second point of making the highway more attractive by reducing congestion also does not apply to this location. Despite this being a busy intersection the current design allows for good traffic flow. There is no congestion that needs to be reduced. The last benefit mentioned is extending the business' effective service area by reducing travel times. Since traffic already flows at the speed limit essentially 24 hours a day at this intersection it is doubtful that travel times will be reduced and even more unlikely the businesses in this area will have a larger service area because of the proposed reconstruction.

This same document states, "The goal of the SDDOT is to provide property owners located adjacent to the project with the access they need, and at the same time, enhance highway safety and reduce project costs." Rather than fail to reach this stated goal I urge you to reconsider the proposed changes in view of the negative effects it may have on the business owners/employers/tax payers at this location.

Sincerely, Martin Rausch, MD

From:Seaman, Todd (DOT)Sent:Tuesday, September 14, 2010 7:40 PMTo:Schochenmaier, Neil; Horan, TomSubject:Fw: Jackson Blvd Construction

Sent from my Wireless Handheld

From: L'Esperance Keith <keith.lesperance@rcgov.org> To: Seaman, Todd (DOT) Sent: Tue Sep 14 07:46:31 2010 Subject: Jackson Blvd Construction

Todd, I wasn't able to attend the info meeting(s) on the Jackson Blvd reconstruction but I live on Alamo Drive just east of the cemeteries and drive Jackson 7 days a week. Directing traffic to Mt View is a really bad idea. The traffic doesn't flow that direction down Jackson to West Main and it's an understatement that directing more traffic to Mt View will create a worse problem than losing 5 parking spaces in front of a building. I'm sorry that will happen to the property owner but for the traffic flow and safety of the motorists to me takes priority. As already stated by others, there are far more businesses between the intersection of Jackson and Mt View and Jackson and West Main. As a resident that drives Jackson so often, I would not be in favor of redirecting traffic to Mt View.

Please give my regards to Lisa and congrats on her selection to that hospital board. She'll be an awesome high functioning/contributing board member.

Keith L'Esperance

"Leaders must decide on what matters in life before they can live a life that matters." Jim Kouzes and Barry Posner "A Leader's Legacy"

From:	Seaman, Todd (DOT)
Sent:	Tuesday, September 07, 2010 7:46 AM
То:	Horan, Tom; Engel, Gary; Staton, Daniel; Schochenmaier, Neil
Subject: Fw: Jackson Blvd reconstruction All,	
FYI.	

tas

Sent from my Wireless Handheld

From: Ellis Robert <Robert.Ellis@rcgov.org> To: Seaman, Todd (DOT) Sent: Tue Sep 07 08:39:07 2010 Subject: FW: Jackson Blvd reconstruction

Todd,

Below is some communication sent to me from an effected property owner. Just thought you should have a copy as this is a DOT project. I'm not sure why it was directed to me as I have not been involved in the public meetings, etc.

Robert Ellis, P.E. Public Works Director City of Rapid City 300 6th Street Rapid City, SD 57701 (605) 394-4154

From: Tracy Krsnak [mailto:tkrsnak@gmail.com]
Sent: Friday, September 03, 2010 1:28 PM
To: Ellis Robert
Cc: Brown Gary; Kooiker Sam; Davis Dave; Mason Jordan; Petersen Bonny; Weifenbach Ron; Hadcock Deb; Waugh Bill; Kroeger Ron; Costello Aaron
Subject: Jackson Blvd reconstruction

#### Dear Mr. Ellis and Council Members,

The following are emails I recently sent to Sam Kooiker regarding the Jackson Blvd reconstruction project proposed by SD DOT. I would like to make it clear that I am not opposed to reconstruction of the intersection, only to the loss of on street parking that is already very limited. We have a small business located at 1104 Jackson Blvd and recently (March of 2009) purchased the building. I had heard there was a construction project scheduled for Jackson and checked with the DOT to see what was involved before we made the purchase. At the time I was told that there would be no effect on the property at 1104 Jackson and we went ahead and completed the purchase. Then this spring the DOT showed up at our building to show us the new proposal and said all of the on street parking would have to be eliminated. If we would have had any idea that the parking in front of our building was being eliminated we would have purchased another property. The DOT went back to the drawing board after seeing resistance from the Mayor and Council members regarding the elimination of the already very limited parking and came back with a plan that saved two parking places. (DOT OPTION 3) While this is certainly better than no parking it is still not acceptable. The DOT then designed OPTION 6 which keeps the on street parking and this was presented along with OPTION 3 at a public

#### meeting on 8/31.

#### Sent to Sam Kooiker on 9/1:

#### Sam,

I am sending you an update regarding the Jackson Blvd. project. It's hard to believe that I have lived as long as I have and am still so nieve. I actually believed that since the DOT offered up a new plan (option 6) for the Mountain View / Jackson Blvd. intersection that they were sincere in bringing that plan forward. At the public meeting last night I certainly was corrected. In hindsight, we as affected property owners should have invited every city council person. Option 6 was presented with the idea that access to Jackson Blvd. would be restricted. That immediately put nearly every driver that uses Jackson Blvd to get downtown at odds with option 6. Beyond that the DOT claimed that about 20% of the current traffic that uses Jackson would be routed to Mountain View because of the traffic light. That immediately put nearly all of the business owners located northeast of us on Jackson at odds with option 6. I firmly believe that the DOT absolutley knew this would be the public response and only presented option 6 so they could come back to the City Council and say....Well, we tried to save the parking spaces but the public doesn't like option 6. Each time a comment was made in a positive manner for option 3, the option that removes 5 parking spaces, or in oppsition to option 6, the presenter Todd Seaman would say "Thank you, please get that to us in writing". Each time a comment was made in favor of option 6 or in opposition to option 3 he would say "Thank you for your comments.....thats why we're here". It became quite obvious that the DOT's goal was to generate support for option 3. I dispute the DOT's "facts" as they were presented that the signal light and small turn created by an island at the intersection would push much traffic on to Mountain View. The proposed signal light will have the standard red-yellowgreen light for the left turn on to Mountain View but it will have seperate green arrows directing traffic on to Jackson. It is my understanding that the green arrows will generally be green and allow direct access to Jackson without stopping. I am not certain when the arrows will be red but the only time I see the need for them to stop traffic is when a pedestrian pushes the cross button on the signal light, something that will be rare, even by the DOT count. (approximately 5 times per day). Drivers will most likey continue with their habit of continuing on to Jackson and even more likely follow the path of least resistance which will still be Jackson Blvd. As more traffic accesses downtown via Mountain View not only will the drivers have to stop at Mountain View 50% of the time, they will also get backed up at Main and Mountain View because of the additional congestion. It seems that common sense would keep the traffic on Jackson Blvd as it will remain the "path of least resistance" to get downtown. While this issue is extremely important to myself and my business partner, Randy Downey, the loss of on street parking will be devastating to Albert Gonzales at Alberts Small Engine Repair as he has absolutley no off street parking for his customers. In addition to a serious inconvenience for our customers and loss of business, we may lose our tenant if there is inadequate parking in from of our stores. The DOT wants to provide 10' for bike lanes and accomodate pedestrians but at the same time apparently has no problem seriously negatively impacting the lives of the property owners affected by the reconstruction. I apologize for being so long winded but I can't over emphasize the importance of this for the local property owners. I appreciate your time and hope you will share this email with your fellow council persons.

Sincerely, Tracy Krsnak

Ps. This is a link to the DOT presentation from the public meeting. <u>http://www.sddot.com/pe/projdev/docs/pubmeeting/JacksonBlvdPresentation\_8\_31\_10\_%</u> <u>20Meeting.pdf</u> Sam,

I took another look at the option 6 drawing on the DOT website. It does look like traffic turning left from Mountain View on to Jackson would cause the traffic moving on to Jackson to stop.I would be curious to see if they can automate the traffic light to stop traffic to Jackson only when there is actually a car waiting to turn on to Jackson or control the light so during the rush in in the morning traffic to Jackson has preference. I came to Rapid City from Omaha many years ago where they made the center lane on the main street go one way to the downtown in the AM rush and the opposite way in the PM to accomodate the traffic home.It worked. Not many accidents. I'm not suggesting that here only that there always seems to be a way to make things work if we look at it hard enough.

Thanks again,

Tracy Krsnak Audio Video Solutions 1104 Jackson Blvd Rapid City. SD

I think the goal of my letter is to find a way to control the intersection on OPTION 6 to keep the traffic moving on to Jackson Blvd. I believe that would best option for the people that drive it everyday and for the local property owners. I think one idea was passed over at the public meeting. There will be a control light at the intersection that will stop Jackson Blvd traffic for both pedestrians and traffic turning from Mountain View left on to Jackson. Currently, although there is a currently traffic light there it is always green going east on Jackson and does not impede traffic flow. The best option to keep traffic flowing on Jackson is OPTION 6 with the proper control signals.

Sincerely, Tracy Krsnak Audio Video Solutions 1104 Jackson Blvd Rapid City, SD

From:kellys [kelsports@midconetwork.com]Sent:Tuesday, September 07, 2010 1:58 PMTo:Horan, TomSubject:jackson blvd reconstrution

Dear Tom,

This is in reference to a request for written testimony concerning the Jackson Blvd reconstruction project. Regarding the two remaining options for the mountain view-jackson blvd intersection, I would recommend the one with Jackson Blvd flowing straight threw. With the amount of traffic from Sheridan Lake Rd to West Main, I believe your count is 21,000 vehicles a day, Jackson has to flow straight threw. I sympathize with the business owners that will lose five parking spots, but if you only rebuild a road every fifty years, you had better get it right.

Sincerely,

Kelly Cotten Kelly's Sports Lounge, Inc. 825 Jackson Blvd

From: Mark Joneson [mjfcrc@rushmore.com]

Sent: Wednesday, September 01, 2010 10:21 AM

To: Horan, Tom

Subject: 8-31-10 Jackson Blvd mtg

Tom: Thank you for conducting the public input meeting last night. Following are a couple thoughts.

- 1. Early in the meeting you mentioned how the angle of existing intersection was a problem from the standpoint of west bound drivers on Mt View having to turn their heads so far to check for on coming traffic. That on coming traffic should be stopping, although I know in the interest of defensive driving it is best to check. Also, the angle seems to be no more severe than interstate ramps, where the traffic is moving twice as fast and people seem to be able to adjust to that.
- 2. It sounds like the main issue from DOT's perspective is the inclusion of pedestrian access but from the numbers I heard last night, your pedestrian count was the least justifiable statistic, having only 1 day of counting in February. I would think such a key item in your rationale would be supported by unassailable statistics.
- 3. I am part owner of 1830 W Fulton and used to manage the Wells Fargo office on Mt View. I do not have hard statistics but 25 years of driving this stretch of road tells me there are VERY few pedestrians in the area of the Jackson / Mt View intersection. There is a perfectly good crosswalk system at Jackson & W Fulton, directly in line with the crosswalk on Mt View from the Care Center to the west side of Mt View. The businesses in the immediate area of the intersection are far more auto dependent (Peerless, Safelite) than pedestrian related. For those (few) pedestrians that need to cross, the existing W Fulton / Mt View crosswalk is not that far away. Heading further west, you don't get a crosswalk until Sheridan Lake Road. Reworking this intersection this extensively so that a crosswalk can be added when a good one exists a block or so further down does not make sense to me.

Because of the reasons listed above, my 1<sup>st</sup> choice is to leave the intersection as is. If I had to choose between your options, #3 would be my preference.

Mark Joneson Financial Consultants of Rapid City 1830 W Fulton Su 100 Rapid City, SD 57702 605-348-1234

From:Sandal, KristiSent:Friday, September 03, 2010 6:54 AMTo:Horan, TomSubject:FW: Jackson Blvd/Mountain View

-----Original Message-----From: jojoyd@gmail.com [mailto:jojoyd@gmail.com] Sent: Thursday, September 02, 2010 5:56 PM To: Sandal, Kristi Subject: Jackson Blvd/Mountain View

This intersection does not need to be changed. There does not need to be a crosswalk at that intersection. Pedestrians can cross at West Fulton and Jackson Blvd., or they can cross further down on Jackson Blvd. A Nursing Home does not need a crosswalk to a lawn mower repair shop. Save us the waste of putting in barriers and changing this intersection.

From: John Rausch Annette Walstad [rauschwalstad@hotmail.com]

Sent: Thursday, October 07, 2010 11:38 PM

To: Horan, Tom

Subject: Jackson Blvd and Mountain View

Dear Mr. Horan:

I wanted to send a brief note regarding what seems to me to be a boondogle waste of money with regard to the redesign of this intersection. This intersection has worked very well for years, and from what I can see, the only real obvious result will be to negatively impact several business owners - and yes, my brother is one of them.

I can't follow the logic of the new design. I understand the governmental desire to promote pedestrian safety, etc., but there isn't any pedestrian traffic there. Even in the future, there won't be any foot traffic there. Why would there be? I urge you to choose the option that makes NO CHANGE to the intersection's current configuration.

As a Realtor, I understand the concept of "highest and best use" when evaluating commercial property. Without significant changes in property usage (and probably in the zoning) those properties on the east side of Jackson Blvd whose access will be significantly adversely affected will NEVER be occupied by the kinds of tenants that attract foot traffic. Until those properties are razed and an apartment or condo complex built, there will be little need for any pedestrian improvements.

I would be very interested to know if any research exists about how many pedestrian-involved accidents have occurred near that intersection. For the kind of money you're looking at spending on this project, I imagine there are many more projects more deserving of the funds. Please consider funding one of them!

Thanks, John Rausch

From: Joe Rausch [JRAUSCH@martinmartin.com]

Sent: Thursday, October 07, 2010 8:46 AM

To: Horan, Tom

Subject: Proposed intersection design change in Rapid City at Mt. View Road and Jackson Blvd

Dear Mr. Horan:

I am writing to you to ask that the South Dakota DOT reconsider its desire to change the intersection design for Mt. View Road and Jackson Blvd in Rapid City. I have travelled through this intersection hundreds of times and have never felt that its design was unsafe or warranted any change. I have reviewed the proposed changes currently being considered, and have come to the conclusion that any of these changes would be a waste of the taxpayers money, and more importantly, would place a tremendous negative economic burden on the businesses located near the intersection. (I also noticed that this negative economic impact is not listed in the power-point presentation found on your website).

During my time as a frequent user of these roads, it has been my experience that pedestrian traffic at this intersection is virtually non-existent. Therefore, spending money to improve pedestrian access would be like building a "crosswalk to nowhere" – a total waste.

I heartily urge you and the SD DOT to adopt the **do-nothing** option with regards to the design of this intersection. Next to this option, I would suggest option 6.

Thanks for taking the time to consider this input. I look forward to my next trip down Rimrock Canyon.

Joe E. Rausch, P.E. (CO) Senior Project Engineer

#### MARTIN/MARTIN, INC.

12499 West Colfax Avenue Lakewood, Colorado 80215 303.431.6100 Ext. 361 fax 303.431.4028 jrausch@martinmartin.com www.martinmartin.com <<u>http://www.martinmartin.com</u>>

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From:Josh Houk [jd\_houk@yahoo.com]Sent:Wednesday, September 08, 2010 10:47 AMTo:Horan, TomSubject:Jackson/Mt. Veiw Project

Tom, I spoke with you during the town hall meeting regarding the reconstruction project. My family owns many building on Jackson Blvd from the gap (main), west past the Jackson/Mt. View intersection. As the project takes form and decisions are made I would like you to know that we as owners would like you to keep the main traffic flow on Jackson Blvd. If traffic is diverted to the already congested Mt. View, we are in great jeopardy of losing long term tenants and business commerce on Jackson Blvd. If you examine the business impact the traffic flow must remain as it exists today. As we believe this is a waste of effort and money, if forced to make a choice we choose option 3.

Josh D. Houk Property Owner. ROGER HALL -

# **Jackson Boulevard/ Mountain View**

# Design – Option 6 (Hwy 44 as through-route) Reconfiguration may

Crosswalks are longer than \_\_\_\_ Option 3 crosswalks Reconfiguration may cause congestion on Mt. View north

RCD 9/07/10

Longer median makes this approach a right-in right-out

Reconfiguration may reduce traffic on Jackson Blvd east

JESIGN HINGES ON DEVELOPMENT OF 3PD EB LANE FARTHER WEST.

الأوال

Approach is

Retain parking stalls

adyan æ
10.5-2010 WE DO NOT NEED A CROSSWALK ACROSS JACKSON BLUD. IN RAPID. THERE ARE NO JAY WALKERS AND VERY FEW PEDESTRIANS IN THAT AREA. ALSO, THERE HAVE BEEN VERY FEW ACCIDENTS AT JACKSON AND MOUNTAIN VIEW. DON'T RE-DO THIS AREA. SPEND THE MONEY ON SOME PLACE THAT REALLY NEEDS Mr. William R. Grode 6122 Wildwood Dr. Rapid City, SD 57702 THANKS, FIXING!

From:Peggy & Keith Gilsdorf [pk\_gilly@hotmail.com]Sent:Wednesday, October 06, 2010 9:38 AMTo:Horan, TomSubject:Jackson Blvd and Mt. View Rd

Hello!

Do emails really make a difference in public policy? I hope so! I am writing to you because I cannot make it to any of your meetings but hope that my voice can be heard.

Please do not change the intersection. Fix it up but do not change it. In my opinion, it doesn't need changing and you can better use the DOT money elsewhere. And if you MUST change it, please use option #6.

Thank you! Peggy and Keith Gilsdorf

From:Leiferman, MarkSent:Wednesday, September 01, 2010 11:29 AMTo:Horan, Tom; Bartlett, StacySubject:Fw: Jackson Blvd-Mt. View, Rapid City

#### Sent from my Wireless Handheld

From: Remmich, Bradley
To: Leiferman, Mark; Schochenmaier, Neil; Seaman, Todd (DOT); Engel, Gary
Sent: Wed Sep 01 12:19:32 2010
Subject: Fw: Jackson Blvd-Mt. View, Rapid City

Fyi. For some reason I received this email. Brad Sent from my Wireless Handheld

From: Carol & Arnold Doyle <addoyle@rushmore.com> To: Remmich, Bradley Sent: Wed Sep 01 12:14:53 2010 Subject: Jackson Blvd-Mt. View, Rapid City

We attended the meeting at Meadowbrook School in Rapid City last night and found it very interesting. Also glad that it was on the message board along Jackson as this is the first meeting we were aware of.

Both of us prefer the Plan #3 for this reconstruction. We also would suggest that you put up the necessary barriers and DO NOT have a Pedestrian crossing at this point. About 1/2 block further north of this intersection is a crosswalk on Mt. View, and we feel it would not be inconvenient for the very very few people who would be trying to cross at this new intersection.

Because of this crosswalk which is for pedestrians going to and from the nursing home and hospital parking lots, we feel it would be a large mistake to have Mt.View as the main street carrying the traffic to the north.

Looking forward to the next meeting.

Sincerely Arnold and Carol Doyle

From: Doshier, Steve (Hills) [steve.doshier@hillsmaterials.com]

Sent: Thursday, September 16, 2010 3:06 PM

To: Horan, Tom

Subject: Project # 0044(129)42 PCN 00X9 - SD44 - From Rapid Creek to Mt. View Road in Rapid City

Dear Mr. Horan:

After attending the recent meeting at Meadowbrook Elementary School, I was inspired to write my thoughts on the upcoming subject project. To anyone who has lived on the west side of Rapid City for any length of time, it is apparent that Mt. View Rd. from Jackson Blvd. north to Omaha St. and its partner Jackson Blvd. from Mt. View northeast to West Main St., work as a pair to handle traffic loads entering and leaving this largely commercial area west of the Gap. If traffic is discouraged from traveling Jackson Blvd. by leaving the parking in place, then more traffic will take the Mt. View route and negatively impact the level of service at the intersection of West Main St. and Mt. View Rd. The SDDOT should pursue four(4) things in relation to this situation.

1)Take the parking off Jackson Blvd. to keep the inbound traffic flowing on Jackson Blvd.

2)Acquire property in the area of the removed parking to construct a small parking lot to be owned and maintained by the City of Rapid City.

3)Don't give up jurisdiction of the Jackson Blvd. segment from West Main Street southwest to Mt. View Rd.

4)Get the extension of Jackson Blvd. from West Main Street northeast to Omaha Street constructed along with the reconstruction of Omaha Street from

Twelfth (12<sup>th</sup>) street west to Mt. View Rd. Then call Jackson Blvd. from Omaha St. to Mt. View Rd. Hwy 44 – Business Loop.

Thank you for the opportunity to provide this written testimony.

Steve Doshier 3302 Snowmass Court Rapid City, S.D. 57702 September 16, 2010

From: lorane coffin [lorane\_c@yahoo.com]

Sent: Wednesday, September 22, 2010 9:07 AM

To: Horan, Tom

Subject: Jackson Blvd, Rapid Ctiy

I am concerned about the plight of merchants and service providers who will be losing business due to the reconstruction of Jackson Blvd in Rapid City. If changes must be made, please use DESIGN OPTION SIX to avoid cutting off direct access to a number of places of business along Jackson Blvd. OPTION THREE is totally unacceptable.

Thank you. Sister Lorane Coffin

From:	Sandal, Kristi
Sent:	Tuesday, August 31, 2010 2:23 PM
То:	Horan, Tom
Cc:	Seaman, Todd (DOT); Bjorneberg, Tim
Subject:	FW: Jackson Blvd in Rapid City

Not sure who all should get this - please forward as appropriate.

Thanks.

-----Original Message-----From: bcafruny@hotmail.com [mailto:bcafruny@hotmail.com] Sent: Tuesday, August 31, 2010 3:19 PM To: Sandal, Kristi Subject: Jackson Blvd in Rapid City

I would like to comment on reconstruction of the intersection of Jackson Blvd and Mountain View Rd., since I am unable to attend the scheduled meeting in Rapid City. One solution to the problem there would be to make Jackson Blvd one-way to the north between Mountain View and Main, and to make Mountain View one way to the south between Main and Jackson Blvd. This would allow for safer traffic flow, on-street parking, and should be relatively inexpensive. It could also be done on a trial basis. Thank you. Bill Cafruny, Rapid City bcafruny@hotmail.com

From: Tom Walsh Jr [twalshjr@dakotaking.com]

Sent: Wednesday, September 01, 2010 1:23 PM

To: Horan, Tom

Cc: bhansen.hillsking@midconetwork.com; Kelly Knutson; 13438; tfritz@lynnjackson.com

Subject: Jackson Blvd

Tom,

I attended last night's meeting but didn't really want to speak up as the tension was rising. I thought you guys did an excellent job hosting the meeting and hopefully making it productive. I can say that in other dealings across the state with the DOT it hasn't been that way.

We own the Burger King's across the state including the one on Jackson Blvd along with the Days Inn and other rentals in the area. We are extremely concerned about option 6 as it would devastate of our businesses and customers. Rerouting the majority of the traffic onto Mountain View would create a hardship on both the hotel and restaurant. I would suspect that we would see a 40-50% hit on the bottom line which would close both of these businesses.

I have dealt with alot of these situations and it is always hard for each business. Losing 3-5 spots is a lot better than losing 30-50% of your traffic flow. I have to say I disagreed with the crowd on the pedestrians issue. If it's a safe cross walk, they will start to use it instead of avoiding the intersection. I believe this becomes even more important if you go ahead with the bike lane. Looking at the intersection and crosswalk length along with the savings, there is only one choice- Option 3.

Please keep me informed when the meetings are so that I can be out there for them. Also is there any way this project can/will be delayed? Having East North and Jackson Blvd closed at the same time will really hurt our business.

Respectfully, Tom

Tom Walsh Jr President Dakota King, Inc 3800 West 53rd Street Sioux Falls, SD 57106 twalshjr@dakotaking.com Phone 605-361-7714 Fax 605-361-3748 WWW.SOUTHFORK-HUNTING.COM

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http://www.eset.com

From: Tom Fritz [TFritz@lynnjackson.com]

Sent: Tuesday, September 07, 2010 11:33 AM

To: Horan, Tom

Dear Tom,

Thank you and your staff for all your efforts in re Jackson Blvd and proposed highway changes. I was present Aug 31 at the public meeting. My wife and I have an interest in Dakota King and are very concerned about your future plans. Option #6 would definitely be harmful to the Jackson Blvd. Burger King. To reroute traffic so that there is less traffic that passes by the fast food restaurant is not just an adverse development...it is a deathblow to that restaurant. The margin of profit is not such that it can withstand a "simple" rerouting of the traffic. What concerns me most are the employees who would be adversely affected. Our manager who was recently acknowledged by Gov. Rounds is the mother of two young boys and her husband is a fire fighter with the Rapid City Fire Dept. Her income and job hangs in the balance. I could go on with stories of the other employees, but hopefully that is not necessary. I am sure many engineering plans have been considered. I am sure many parking spots are at stake. There is the possibility of safety hazards etc., but I want you and your staff to know that there is a certainty of disaster to certain families and people and that this not simply an engineering problem. I ask that you and your staff favorably consider Option # 3. Thanking you in advance, I remain, Sincerely yours

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Thomas G. Fritz Lynn, Jackson, Shultz & Lebrun, P.C. P. O. Box 8250 Rapid City, SD 57709 (v) 605-342-2592 (f) 605-342-5185 tfritz@lynnjackson.com

From:	Burger King 13438 [bk13438@midconetwork.com]
Sent:	Thursday, September 02, 2010 11:38 AM
To:	Horan, Tom
Cc:	Brad Hansen (Brad Hansen); Tom Walsh Jr (Tom Walsh Jr); tfritz@lynnjackson.com
Subject:	Jackson Blvd reconstruction

Tom,

My name is LaChel McCollar, I am the restaurant manager of Burger King on Jackson Blvd. I cannot stress enough my concern should you chose to go with option 6. Redirecting traffic from Jackson Blvd does not make sense to me and those that I have had a conversation with about this topic. It will devastate all of the businesses located in the area on Jackson Blvd to save 5 on street parking spots, which in my opinion are extrememly dangerous anyway with the speed limit on Jackson Blvd. I empathize with the couple of businesses that would benenfit from option 6, however much more would be lost by that move than gained. I have worked for this company for 24 years and to think that a decision that #1 is not what the majority of the areas affected want, #2 will affect many more businesses than if option 3 were chosen, and #3 would significantly decrease traffic, I firmly believe the number is more likely to reach a 40-50% decrease as opposed to the 10-20% your team has come up with, will ultimately not only result in the closing of our business but many businesses located along Jackson Blvd. and could potentially end my career as well as my teams and the hundreds of employees option 6 would affect. I strongly urge, on behalf of myself, my team, and our families, that you chose option 3.

LaChel McCollar

Burger King 13438 711 Jackson Blvd Rapid City, SD 57702

From: Brad Hansen [bhansen.hillsking@midconetwork.com]

Sent: Wednesday, September 01, 2010 2:21 PM

To: Horan, Tom

Cc: 'Tom Walsh Jr'

Subject: HWY 44/Jackson Blvd Project

Tom,

Thanks to you and your team for taking time form your families to inform the public on the proposals for the Jackson Blvd project.

After listening to your presentation it is clear, your team has spent several hours to put together the best plan to make a tough situation the best possible, you will never make everyone happy, but I appreciate your effort. As an operating partner of Burger King, I am very concerned with option 6 on a number of issues:

#1 – No one really knows for sure how much traffic will be diverted from Jackson Blvd, but we can all agree traffic will be diverted. As a restaurant we rely on exposure, a high percentage of our guests make their decision on where to eat while driving, so any drop in traffic negatively effects our business.
#2 – You mentioned part of your responsibility is being good stewards of the tax payers money, option 6 is a more expensive, and appears to take more time to finish construction, than option 3.

#3 – The 40yr plan on this project is to help the flow of traffic and make the Jackson Blvd and Mountain View intersection a safer intersection. Looking at your traffic delays, it is clear option 6 creates a bigger traffic delay than what is currently occurring on Mountain View, so this option does not fit into your 40 year goal.

I strongly support option 3, and while I sympathize with the few businesses that loose 5 parking spots, there are far more businesses that will be effected negatively by going forward with option 6.

Thank you for your time, Brad

## **Brad Hansen**

Director of Operations Hills King, Inc 1901 West Main Rapid City, SD 57702 <u>bhansen.hillsking@midconetwork.com</u> Phone 605-388-5287 "Have It Your Way!"

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Information from ESET NOD32 Antivirus, version of virus signature database 5416

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

From: Lorin and Mary Brass [brass@iw.net]

Sent: Monday, October 11, 2010 9:37 PM

To: Horan, Tom

Subject: Highway 44 Improvement Project

We are writing regarding the Hwy 44 improvement project in Rapid City and specifically the options for the intersection of Mt. View and Jackson Boulevard.

We are deeply concerned about safety and about the continued viability of businesses at and near that intersection. It is our understanding that, for one of the busiest intersections in the city, there have been very few accidents and none of them serious. It is unclear that the changes being considered in Options 3 and 6 do much to improve safety yet they do a lot to hurt the businesses because of the proposed traffic flows and/or loss of parking spaces. For instance potential customers to Rausch Granite, Advanced Chiropractics and Albert's Repair that come from the northerly direction have to bypass those businesses with no obvious turn-around location for blocks. And even coming from the southerly direction, they will have to be diligent to know when to enter the parking lot of the business. The options being considered seem to fly in the face of encouraging economic growth, especially in these difficult times.

The best option is to leave the intersection as is. The intersection is safe, there are cross walks for pedestrians within close proximity, and this option maintains the viability of the affected businesses. Leaving the intersection as is also cuts millions from the project costs and saves tax payers' hard earned dollars.

If, however, for whatever reason it is decided to make a change, Option 6 would at least offer some access for customers and hence would be our recommended option.

Thank you for your consideration.

Lorin and Mary Brass

From:Jim Shea [jshea@nssa.com]Sent:Tuesday, September 14, 2010 8:09 AMTo:Horan, TomSubject:Jackson Comment

Dear Tom: I am the administrator for Neurosurgical & Spinal Surgery Associates, P.C. We are the owners of Promotion Physical Therapy. I am writing to offer my thoughts on the proposed re-construction of the Mountain View and Jackson Boulevard intersection as set forth in your proposed documents and summarized at the public meeting Tuesday, August 31, 2010.

We support re-construction Option #3 and strenuously oppose Option #6. Our business is part of the Jackson Boulevard Centre complex which is comprised of 5 separate businesses. As you know the complex and the building we occupy is at the intersection of the two streets whose intersection is to be reconstructed. While I don't speak for the other businesses in the complex it is obvious that they would be affected the same as our business. In our opinion Option #6 would create significant barriers to access for a great many of our patients which in turn would create undue hardship for our businesses. Option #3, on the other hand, creates a much better and safer intersection for traffic traveling on the two streets as well as more efficient and safe access into our busy office complex.

We are the busiest office complex in the surrounding area. We estimate that there are upwards of 250 cars that enter our property each day. Of that number at least 90% come from the north and make a left turn. By selecting Option #6 and putting a median at the intersection you will prevent over 200 cars each day from making a left turn into the property. This means that they will have to travel down Jackson Blvd further and make a turn either at a side street along the way or somewhere in the Sheridan Lake area. This will inconvenience, annoy or confuse many of our patients, in addition to making some of them late for their appointment. It will certainly cause excessive traffic on adjacent residential streets, which could reduce safety and annoy the residents, as more and more vehicles use them to turn around and come back to our office.

In addition, you will have 200 cars trying to make a U-turn and cross 4 lanes of traffic plus a bike lane at the same time. In addition to just the volume of U-turns, many of our patients are elderly and/or somewhat infirm which will further exacerbate difficulty in making these types of turns. This could add to the volume of accidents as this is one of the busiest intersections in town as it stands now. While I'm not a traffic expert, I perceive that U-turns may be less safe than left turns. By using option #3 you move the entrance into our property to the south and create much more room to decelerate and prepare for the turn which will allow our patients a safer and more efficient entrance to our property.

The property owners have recently made an agreement with the city of Rapid City to allow

the creation of a trailhead accessing the Skyline Drive Wilderness area on our property. This will increase the total volume of vehicles coming into our property during the day but also in the evenings and weekends, so the overall volume of traffic is expected to increase in the near future.

We estimate that we have 10 times more traffic than the 4 effected businesses next to us combined and who will lose 5 parking spots. If you take into account the number of people impacted our property obviously has the greater level of disruption with option #6 versus option #3. In doing a visual review of these adjacent buildings I see that they each have space in the rear of their buildings for parking as well as some side street parking. Echoing Todd Seaman's comments from the meeting, parking spots on highways and streets with speeds 35 mph and up are not recommended, per state and federal guidelines.

Finally, I've have taken the time to drive down Mt. View Road to see if I could get a feel for how converting it to the main through-road might be an overall positive or negative result. While I don't have any data to support this, it is my feeling that with this significant increase in traffic you will be creating a bigger bottleneck both at the intersection of Mt. View and Main Street and Mt. View Road and Omaha Street as these are already very busy intersections most days. In addition the flow of traffic on busy mornings and afternoons on Jackson Blvd through West Main appears to be the smoother of the two options.

Thank you for your time in considering our comments regarding the reconstruction. If you need additional information or wish to speak with me, please don't hesitate to contact me.

Sincerely,

James B. Shea Administrator

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James B. Shea, Administrator Black Hills Neurosurgery & Spine 4141 Fifth St. Rapid City, SD 57701 Ph.: (605) 341-9835 Fax: (605) 341-4547 Cell: (605) 381-0919 email: jshea@nssa.com www.spinecenteronline.com **Confidentiality Notice**: This email message, including any attachments, is for the sole use of the intended recipient(s) and may be privileged, confidential, and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the Sender immediately and destroy all electronic or paper copies of the communication, including any attachments

#### August 31, 2010

### PROJECT# P0044(129)42 PCN 00X9

### PENNINGTON COUNTY

**Please Print** NAME **ADDRESS** 1. 1 Ichnel + MARQUITA MACK 3707 MARGARet CT 2482. FlormANW J 2. en 3. le FARVIEWDR wordd 50 10 1. 4. ackson Bleel 5. 2944 6. / 2404 BUN anc ende Bittington allen +A 7. 3010 Morningview Iger Pr 8. BL 2412 500 mill 9. 11 allor an 10.5 GAack 11. 81 ha AUSO (12 4 v H1-0 22 C 13. irginia Winter 9 X ain 14. 5 od nari 18. Hartla 15. ide. 35 toris tar 16. CLIFF Perrace robod 45 4 Re 12ac 17. 0 Mo mark Son 1116 Jackson 18. ulle vd 19: 711 CIC STY yle 21 04 Milbran 2t Drive RC 20. dance Blud 1919 Centre 21. Bur SD RI 100 22. KSA nolow 240 23. Ton SIA HIRS 24. 15AND skil 7 1% 25. Acken 1110 NEAVER m AKAA nou

PUBLIC MEETING/OPEN HOUSE SIGN-IN

### August 31, 2010

### PROJECT# P0044(129)42 PCN 00X9

# PENNINGTON COUNTY

Plea	ase Print
NAME	ADDRESS
1. Crystel Van Dam	2506 Jackson Blud
2. Dave Schroeder	2020 Jackson Blud
3. GAYLE IBRGENSON	10050 W HWY 44 RC
4. Judy Chilstrom	2705 Jackson Blud
5. Donna Pola	2709 Jenny Gutch, Rd A.C.
6. JOSH HOUK	PO BOX 9213 RAPID CIM 57209
7. Jalle Boerge An	Sourie Restaurget
8. Al Milles	2409 Dakoming A. C.
9. Chris Plair	US Senator Tim Johnson
10. James M. Kuchn	2017 Selfirk Place, R.C.
11. Tim Ravsch	1116 Jackson Blud RC.
12. Jesse Gingeas	1116 Jackson Blud RC
13. John Mall	3718 Jerson Bh
14. Lenny Harrison	3802 Hagen CX.
15. Lerey How IE	1240 JACKSON BLUDS
H. / - Unist Tiz	1901 U MAIL 711 Tackson She
17. Mike Daeger	2614 Arrowhead Dr. 57702
18. Tim Smith DD	ZZI8 JACKON DLUD STU, 1
19 Jany- Jailene Mc Saury	1503 June Ct 57702
20. Jacq + Eduline Kertzme	4910 Bleekanidget 57102
21 Intrick + Denise Low ling	2734 W. St. Anne St. 57702
22. Steven P. Smity	1820 Jackson B(4) 57702
23. Medran H Jackson	2409 Lodwood Dr DESP 57002
24. have Sekell	5507 JUNE CHE SP 5000
25 Jecqueline Lallen	3202 Frontee Pl R.C. S.D.S.M.

# August 31, 2010

## PROJECT# P0044(129)42 PCN 00X9

## PENNINGTON COUNTY

	ease Print
NAME	ADDRESS
1. NEIL SCHOCHENMAIER	SA DOT - PIERRE
2. Regisia Lewis	3809 Hagen CT RC.
3. BAUCE CURINETEN	3120 IRIS DI RC
4. MAL WEBER	3205 FAIS DR RE
5. Lynne Mazzone	1710 Palo Verke Dr RC
6. Erik Olness	1918 Pablerde A RC
7. PANEPARKER	327 SAN MARZO Blod DOT
8. marven Sorre	1217 Lance ST R.C.
9. DON SUBEJ	2731 HARNEY PLC, R.C.
10. mike Stevenson	2313 Jackson Blud
11. DARCI Memanique	4713 Primrose PI RC.
12. Theenan Chesar	5795 Clegharn Canyon Rd. R.I.
13. Ben Morganhuld	744 Jackson Blud RC 57702
14. ChrisBossen	23597 Old Folsom Rd. 57703
15. Loch M Coller Burgeling	TIL Lackon Blid RC STUR
16. Camppod	122 Tackson Price
17. Macy Asmach	1104 Jackson
18. Wayn Rhy	2129 Jone
19. Len Jugen	2902 Tomohank
20. Ath A Barka	1919 Central Bled
21. Ada	2219 Akimo Dr
22 Meyou Kaush	602 Dilger Here Business
23. 20,000	2318 Lance St. O.C. 1
24. Sin Hansell	ATTI Jaskson Blud
25. May Aton	3702 Morninguise Da

## August 31, 2010

## PROJECT# P0044(129)42 PCN 00X9

# PENNINGTON COUNTY

Please Print		
NAME	ADDRESS	
1. Ray Millins	800 Jackson Wid	
2. FRED& JUDY STEECE	2925 COUNTRY COUR DR.	
3. Craig Tieszen	3416 Brookside	
4. JOE SCHISSEL	2904 FALLS DR	
5. John Will MAN	3214 KIRKWOOD DI	
6. Janece Rieman	4021 Pinehurst ct	
7. MARK JONESON	1830 W. FUCTOR St.	
8. WAYNE HERREMAN	4850 VISTA HILLS DR	
9. Pamela Walsh Fritz	4338 Timberlane Pl. 02	
10 Jand Jowney	1104 Jackson BlvA.	
11. Junta Vhin	1746 Toper Street	
12. JOM SCACEERY		
13. D& Loto De	2322 Lance	
14 Robort Blynenthal	3419 Gray tax Ct.	
15. ROGER HALL	2107 WASTESTE PLACE	
16. Lang Tally	2327 Huntingter	
17. Ryan Winkler	2033 2nd Ave	
18. SRIK SWANFUN	3820 TACKJON Blvd	
19. Benc Hufford	2127 JAckson Bluch	
20. Albert Gonzalez	1108 tackson Blud	
21. Kayte Halstead	2416 Jackson Blvd.	
22. TRENE M. JONES	2219 ALAMO DR.	
23. JEFF Hock	1/22 JACKSON BLUD	
24. Robert Geldert	2125 Stirling St.	
25. MIKE DENDER	1710 TEREE ST.	

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# August 31, 2010

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# PENNINGTON COUNTY

Please Print

NAME Please Print ADDRESS		
1. Cinte Wacker	2947 Country Club Dr.	
2. Don Whether	2947 County Clark De	
3. Jenes Alex	8A Glendale fare RESO	
4. Denie Stel	2732 Rawhide De RCSD	
5. Kyle Hart	2801 Jacksn BLID	
6. Frances Wait	2725 Raymond Dr	
7. Richard J Weitz	2725 Raymond Dr	
8. Kathleen andream	3215 Park Drive	
9. Follig Illon	2409 Judy Ave	
10. BRICE GARCIA	2409 Juda Ave	
11. Lynn Loomer	3418 Sockwood Dr.	
12. aleatha Elset	1815 Central Blod	
13. DAVID STROM	2114 JANEPR.	
14. Russ Holliday.	2138-4th Ave	
15. Stave Doshier	3302 Showmass Ct.	
16.		
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25.		

ADDRESS NAME Janet Laldeling Bjø Schreier 400 1 Conyon Dr 57702 7-0 Woodrum LN - 02 2801 Jackson Blud '02 Jen Schlim teggy Dixon Cath Robest 3311 Hogan Ct 02 701 MH. View Rd RC 02 Ball Eck 3215 PAVK Drive Timothy Gasper + Many Gasper 2412 Annow St. MANE DAVIS 2622 HURVARD 57702