1.0 INTRODUCTION

A parking study was conducted for the Silver City Downtown Action Plan in March and April, 2010. The study included an inventory of the study area, and two utilization surveys. The study area was defined as the area generally bounded by College Blvd to the north, the Big Ditch to the east, Sonora St to the south and Cooper St to the west. Figure 1 contains a map of the area studied.

Two utilization studies were conducted, one on Thursday April 15, 2010 to represent an average weekday and one on a Saturday to represent the weekend parking demand. The Saturday count was conducted on April 17, 2010, and it corresponded with the Celebration of Spring Festival in Big Ditch Park. The data were collected by parking area and summarized by blocks and streets.

The purpose of the study was to quantify the existing parking, and determine how much of the available parking is being utilized. In addition, recommendations were prepared to maximize parking in central Silver City. The data described and summarized herein yield valuable information concerning parking characteristics within the Silver City downtown core.

Figure 1. Parking Study Area

2.0 PARKING INVENTORY

A block by block parking inventory was conducted to identify all existing parking spaces within the study area corridor. The inventory included all parking spaces contiguous with each block, including all on-street and private parking lots. On-street parking was collected only on one side of the street for each block, except for the perimeter of the study area where both sides of the street were counted. All public and private off-street parking was internal to each of the 31 blocks. The majority of public parking was located between the businesses facing Bullard St and the Big Ditch, dirt/ gravel surfaces without formally developed spaces. The inventory also included the Silver City Visitor Center parking lot adjacent to downtown.

Some properties were excluded from the inventory data collection. Single family residential parcels were not counted as they were difficult to define and would not be considered part of the City's parking supply. Similarly, small open areas at commercial properties were not counted unless there was specific designation as site parking or vehicles were parked during the utilization study.

In addition to determining the number of parking spaces, the roadway widths were measured. These widths were used to determine if each roadway was wide enough to permit parking along each side. Roadways narrower than 30' may restrict emergency vehicle access which requires 14' for passage and fire truck setup if vehicles can park within 8.0' of the curb. Many street sections within downtown Silver City have curbs higher than 9", resulting in vehicles parked up to 4' from the curb. The high curbs can lead to severe restriction of the roadway width for emergency vehicle access when vehicles are parked along these sections.

The inventory considered a number of data collection parameters. For on-street parking, the number of spaces was identified as parallel, angle, and 90° parking spaces. On-street spaces were estimated where parking prohibition was neither signed nor had yellow painted curb. Time limits, signed in some sections of Bullard St and Yankie St, were noted for the number of spaces that they applied to. On-street spaces designated for the physically challenged were also quantified by each block, as well as in parking lots.

Private parking areas were also identified and counted. Some parking lots were paved with designated spaces, some paved without formal spaces identified, and some lots were unpaved with earth or gravel surfaces and no specific definition. For each lot without formal spaces, the number of spaces was estimated. In addition, a number of vacant lots within the study area were identified, and these areas were frequently utilized for off-street parking without formal space designation. Each vacant parcel was identified, and the number of spaces estimated as if they would be developed as formal parking lots. The spaces were estimated by dividing the vacant parcel area in square feet (SF) by 325[1] SF to conservatively determine the potential parking yield for each lot.

The 31 block inventory yielded the following general results.

Total Parking Spaces	1254	100%
On-Street Parking Spaces	785	62%
Parallel	758	96%
Angle	13	2%
90°	14	2%
Off-Street Parking Spaces	469	38%
Off-Street Public Spaces	175	14%
Total Handicap Spaces	31	2%
On-Street Handicap Spaces	25	2%
2-Hour Time Limited Spaces	67	5%

The inventory data indicate that the majority of parking within the downtown area is on-street parking, and 96% is parallel parking. Angle parking is restricted to Broadway St between Texas St and Arizona St, and 6th St east of Bullard St. The small percentage of time limited parking indicates that the restrictions should minimally impact parking in central Silver City.

A block-by-block summary was compiled and the results are contained in Table 1. This table indicates the concentration of parking block-by-block downtown. It should be noted that the where parking was allowed on both sides of a perimeter street (such as Arizona St), both sides were included in the inventory. For all other blocks, one the side of the street adjacent to the block was counted. Block 40 is the Visitor Center parking lot along Hudson St.

[1] ITE *Traffic Engineering Handbook*, 4th Edition, 1992, page 212, range of 310 SF to 330 SF per vehicle.

Table 1
Parking Inventory – Study Area by Block

Block	On-Street	Off-Street	HDCP	Block	On-Street	Off-Street	HDCP
1	53	24	0	**2**	30	68	1
3	16	60	1	**4**	30	20	3
5	26	0	0	**6**	11	8	2
7	33	0	0	**8**	25	5	0
9	27	0	1	**10**	26	33	0
11	20	0	1	**12**	14	7	1
13	26	0	1	**14**	25	4	0
15	12	13	0	**16**	26	0	1
17	26	15	3	**18**	22	22	1
19	27	0	3	**20**	22	5	2
21	13	8	2	**22**	35	0	1
23	31	0	0	**24**	33	20	0
25	38	0	1	**26**	22	0	2
27	8	11	1	**28**	44	31	0
29	15	28	1	**30**	24	8	0
40	0	73	2				

The highlighted cells in Table 1 represent the densest development in downtown Silver City along Bullard St and Broadway St. These 10 blocks contain 195 on-street parking spaces, 48 off-street spaces and 13 handicap spaces. These blocks represent 30% of the study area with 20% of the parking supply, indicating latent parking demand in this area.

The inventory data was also summarized along each study area roadway. Table 2 contains the number of available on-street spaces by roadway, and a summary of the off-street private and public parking spaces.

Table 2
Parking Inventory by Location within Study Area

Street	Spaces	Street	Spaces
Bullard St	147	6th St	41
Texas St	147	Kelly St	33
Arizona St	91	Market St	30
Pinos Altos St	27	Yankie St	49
Bayard St	30	Broadway St	73
Cooper St	16	Spring St	64
College Ave	12	San Vicente St	5
7th St	26	Sonora St	2
Private Off-Street	286	Public Off-Street	175

3.0 PARKING UTILIZATION

Two parking utilization studies were conducted within the study area, on Thursday, April 15, 2010 and Saturday April 17, 2010. Each parked vehicle was counted each loop through the study area at both on-street and off-street locations. The weekday count was conducted from 8:00 am through 6:00 pm (10 trips), with each loop starting at the top of each hour. The weekend count was conducted from 9:00 am through 3:00 pm (6 trips), also starting each loop at the top of the hour. Each loop required approximately 40 minutes to complete. Each area inventoried was included in the parking count. A summary of all data collected is contained in Appendix B.

The weekend count was likely not a typical weekend as the Celebration of Spring Festival was occurring between the hours of 10:00 am and 1:00 pm. It is anticipated that the parking demand may have been slightly higher than normal on that day. There was also a flea market utilizing the Visitor Center parking lot until noon on Saturday, likely increasing vehicle volumes at that location.

In addition to counting the spaces, three types of vehicles were noted. The primary type was a passenger vehicle, assumed to be 18' or less in length. These vehicles should fit into a standard 22' long parking space. The second classification was a large vehicle, and full-size, dual cab pickup trucks or larger fit in this category. The final category was a motorcycle.

Tables have been prepared to summarize the parking utilization. The tables were created separately for the weekday and weekend parking utilization, and the values represent all vehicle types. The data in Tables 3 and 4 were summarized by block, and also include a total for all blocks within the study area.

Table 3
Weekday Parking Utilization – Study Area by Block

Block	Spaces	Ave Filled	Percent Filled	Block	Spaces	Ave Filled	Percent Filled
1	77	13	16%	**2**	99	30	30%
3	77	25	32%	**4**	53	12	23%
5	26	15	59%	**6**	21	7	33%
7	33	4	12%	**8**	30	18	60%
9	28	19	66%	**10**	59	10	17%
11	21	16	74%	**12**	22	11	50%
13	27	13	47%	**14**	29	14	47%
15	25	8	33%	**16**	27	10	37%
17	44	16	37%	**18**	45	15	33%
19	30	16	53%	**20**	29	17	59%
21	23	8	34%	**22**	36	8	22%
23	31	7	22%	**24**	53	22	41%
25	39	17	44%	**26**	24	15	62%
27	20	17	83%	**28**	75	16	22%
29	44	19	44%	**30**	32	7	21%
40	75	12	16%	**ALL**	**1254**	**436**	**35%**

Table 4
Weekend Parking Utilization – Study Area by Block

Block	Spaces	Ave Filled	Percent Filled	Block	Spaces	Ave Filled	Percent Filled
1	77	15	19%	**2**	99	36	37%
3	77	30	39%	**4**	53	18	33%
5	26	20	75%	**6**	21	14	67%
7	33	12	36%	**8**	30	21	71%
9	28	20	73%	**10**	59	19	32%
11	21	20	94%	**12**	22	8	37%
13	27	18	67%	**14**	29	23	78%
15	25	11	45%	**16**	27	7	24%
17	44	2	4%	**18**	45	9	21%
19	30	17	56%	**20**	29	20	70%
21	23	10	45%	**22**	36	6	18%
23	31	7	23%	**24**	53	23	44%
25	39	17	44%	**26**	24	17	71%
27	20	6	28%	**28**	75	19	25%
29	44	17	39%	**30**	32	8	26%
40	75	28	37%	**ALL**	**1254**	**499**	**40%**

The results from the downtown core were highlighted in Tables 3 and 4. Summarizing the data, the downtown core experienced 54% average utilization on a weekday and 49% on a weekend. The remaining study area experienced average utilization of 30% on a weekday and 38% on a weekend. It is interesting to note that the weekend count had a higher average utilization than the weekday, 40% as compared to 35%. This information is shown graphically on the following page.

Utilization fluctuated throughout the day. The minimum and maximum hourly counts are summarized in Table 5.

Table 5
Parking Utilization – Minimum/Maximum Hourly Summary

Block	Time	Total Spaces	Filled Spaces	Percent Filled
Weekday				
Maximum	12:00 – 1:00	1254	521	42%
Minimum	8:00 – 9:00	1254	251	20%
Weekend				
Maximum	12:00 – 1:00	1254	584	47%
Minimum	9:00 – 10:00	1254	361	29%

The weekend experienced a higher peak hour than the weekday. This may have resulted from the special event that was focused east of Bullard St between Yankie St and Kelly St. It should

be noted that the highest utilization both on the weekday and weekend occurred over the noon hour. The lowest utilization occurred during the first hour of data collection each day.

The following graphics were prepared to show the average utilization percentages during the weekday and weekend counts. These data are found in Tables 3 and 4.) The weekday count showed the highest utilization near 6th St and along Broadway St. The weekend count found maximum utilization in the Bullard St corridor.

Figure 2/3. Parking Utilization by Block

An alternate examination of utilization was conducted for parking along each roadway corridor. Table 6 contains the utilization results for on-street parking along each roadway, and summaries for off-street locations. The table reports the maximum [Max Filled] and average [Ave Filled] parking utilization for the on-street spaces along each road for the weekday and weekend counts. The percentage of spaces filled for the maximum [Max% Filled] and average [Ave% Filled] hourly period is also reported.

Table 6
Parking Utilization by Corridor

Street	Total Spaces	Weekday				Weekend			
		Max Filled	Max % Filled	Ave Filled	Ave % Filled	Max Filled	Max % Filled	Ave Filled	Ave % Filled
Bullard St	**147**	101	69%	78	53%	123	84%	108	74%
Texas St	**147**	58	39%	42	29%	79	54%	60	41%
Arizona St	**91**	21	23%	15	16%	21	23%	16	17%
Pinos Altos St	**27**	4	15%	2	8%	4	15%	2	7%
Bayard St	**30**	14	47%	8	28%	7	23%	5	16%
Cooper St	**16**	6	38%	3	20%	5	31%	3	21%
College Ave	**12**	10	83%	5	45%	10	83%	6	51%
7th St	**26**	14	54%	8	30%	12	46%	10	37%
6th St	**41**	32	78%	25	61%	37	90%	33	79%
Kelly St	**33**	17	52%	14	41%	23	70%	20	60%
Market St	**30**	25	83%	17	56%	24	80%	21	69%
Yankie St	**49**	24	49%	18	36%	31	63%	25	51%
Broadway St	**73**	46	63%	39	53%	39	53%	34	47%
Spring St	**64**	21	33%	16	25%	17	27%	12	18%
San Vicente St	**5**	1	20%	0	4%	2	40%	1	17%
Sonora St	**2**	4	200%	4	180%	4	200%	4	192%
Private Off-Street	**286**	121	42%	85	30%	93	33%	68	24%
Public Off-Street	**175**	76	43%	56	32%	89	51%	74	42%

Table 6 confirms that the parking is aggregated along the primary commercial corridors. Bullard St, 6th St, Market St and Broadway St each average better than 50% utilization during weekdays. The weekend found Bullard St, College Ave, 6th St, Kelly St, Market St and Yankie St averaging more than 50% utilization. The 6th St corridor averaged the highest utilization both weekdays and weekends, and experienced the highest hourly utilization, 90%. (There is one anomaly in the data, Sonora St, which had utilization near twice the capacity. This result was from residential vehicles parked partially in the street where no parking should be permitted.)

The block by block on-street segments indicated that Bullard St was the primary destination. Review of the hourly data revealed that each segment of Bullard St between 7th St and Spring St had at least one hour where there were no parking spaces available, two segments where one additional vehicle was parked over the established capacity, and one segment were two vehicles were parked over capacity. No other roadway (except Sonora St – as described above) met or exceeded capacity throughout the study period. Bullard St, between 7th St and Spring St should be considered capacity constrained, i.e., there is more demand for parking than there is capacity along Bullard St.

The vehicle types were also summarized for the two study periods. Large vehicles accounted for 3.9% of the weekday parked vehicles and 3.8% on the weekend on average. Motorcycles

constituted 0.9% of the weekday vehicles and 0.6% of the weekend count. All remaining vehicles counted were standard size passenger vehicles.

4.0 ON-STREET PARKING TYPES

On-street parking provides destination parking for access to the businesses and residences within the Silver City downtown. The on-street parking supply is either parallel or angle parking, and angle parking can be any angle between 30° and 90°. The parking inventory indicated that 96% of all on-street parking in Silver City is parallel parking. The remaining spaces are angle parking, about half are 90° and half are less than 90°. None of the angle parking is designated with striping.

Parallel parking should remain as the primary form of on-street parking in downtown Silver City. Given the block lengths in Silver City, it will be more efficient to provide parallel parking along two sides of a street (at least 30' wide) unless the street is wide enough to allow two rows of angle parking. Angle parking will increase the parking supply by up to 70% (at a 45° angle) along one side of a street, but a 100% increase would be required to make it as efficient as parallel parking. If the angle is increased to 60°, angle parking would be as efficient as parallel parking, however, it would require the travel lane to be 1 to 2 feet wider in each direction to accommodate vehicle turning radii. Two rows of 45° angle parking require a minimum effective width of 58', while two rows of 60° angle parking would require 62'. The widest street in downtown Silver City, Broadway St, has a maximum effective width of 59'.

Angle parking can be designed as head-in or back-in parking. Currently, Broadway St has head in angle parking along the south side between Texas St and Arizona St. The parking is uncontrolled in that it has no space demarcation to designate each space. This can lead to multiple angles for the vehicles parked along the street, as well as varying angles on a daily basis. If too flat of an angle is parked by the initial vehicle, the number of spaces available may be reduced. Similarly, if a steep angle is first selected, the parking supply may be increased, however, it may compromise safety for vehicles exiting a space encroaching into the travel lanes. Many communities across the United States have converted head-in angle parking to back-in angle parking. Each requires the same amount of parking area, however, back-in angle parking has proven to have a better safety record. Head-in angle parking is simpler for the parking maneuver, but more difficult to safely exit a space as sight distance can be very limited. Back-in angle parking is similar to parallel parking, using the same movements, but much easier and safer to exit than head-in parking. The safety benefits of back-in angle parking include:

1. It is safer to reenter the roadway. Head-in angle parking requires a driver to back into the travel way, frequently without the benefit of sight distance to oncoming traffic. In addition, the time for a driver who has parked in a head-in angle space to back into traffic and then reverse direction into the proper travel direction ranges from 15 to 20 seconds. This reduces capacity along the street for that amount of time for each parking maneuver. Back-in angle parking provides much better sight distance, and requires the time to make a standard right-turn, typically less than 5 seconds.
2. It is safer to load and unload a vehicle. When someone places items in a car trunk with head-in angle parking, they must do so behind the vehicle, potentially in conflict with

passing traffic. With back-in angle parking, all loading and unloading is performed on the curb side of the street.

3. It is safer for the elderly to enter the street. With back-in angle parking, the driver is facing the direction they wish to go, not entering the travel stream by backing into traffic. This safety benefit applies to all, but most benefits the elderly who may have slower reactions or reduced mobility.
4. It is safer for young children. Passenger vehicles typically have the door open out, and this directs the person exiting toward the back of the vehicle. Front-in angle parking directs exiting passengers toward the street while back-in angle parking directs passengers toward the curb.
5. Back-in angle parking is safer for cyclists because there is better visibility along the road when exiting a space.

The principal negative effect of back-in angle parking is that vehicle emissions are directed toward the sidewalk. For most vehicles this is not an issue unless a driver idles for an extended period of time. The emissions condition is essentially the same as for parallel parking.

5.0 ON-STREET PARKING STANDARDS

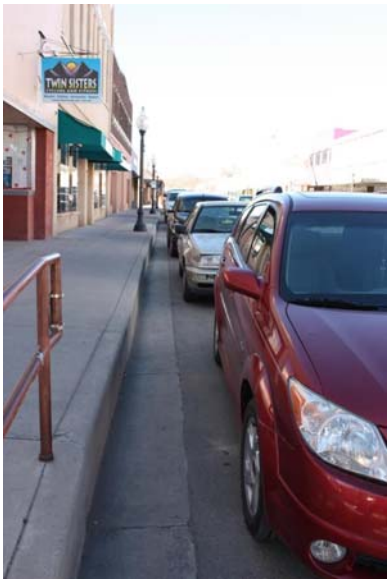
Parking standards provide uniform guidance in the design of parking facilities within a community. These guideline apply to types of on-street parking (parallel, angle), as well as lane widths and offsets from intersections and obstructions. Standards and guidelines for on-street parking are provided in current editions of many documents including the National Committee on Uniform Traffic Laws and Ordinances *Uniform Vehicle Code*, the Institute of Transportation Engineers (ITE) *Traffic Engineering Handbook*, the FHWA *Manual on Uniform Traffic Control Devices*, and the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* and in the *New Mexico Driver Manual*.

On-street parking in downtown Silver City has three primary concerns – parking prohibition near intersections and at fire hydrants, and the width of parking spaces. National standards are applicable in most locations within Silver City; however, there are unique features within the downtown area that require consideration of basic design principals to create standards that fit the Silver City environment. The unique features in central Silver City include:

1. Small intersection return radii. The intersection radius allows a vehicle to flow around an intersection return without encroaching into the opposite direction lane or the pedestrian zone. When there is no return radius, or a very small radius (less than 10'), a driver may have to maneuver their vehicle outside the travel lane they wish to enter to complete a turn. The presence of

parallel parking aisles along each side of most downtown streets provides the required turning radius for passenger vehicles, though the turn may unsafely encroach into pedestrian space. This is especially the case for the returns that have no radius.

2. Raised sidewalks (high curbs) greater than 9 inches above the roadway. Silver City has numerous sidewalk sections greater than 9 inches high in the downtown area. These curb heights/raised sidewalks are primarily to accommodate stormwater runoff within the streets. The high curbs however, prevent passengers from opening a door and exiting a vehicle on the curb side when parked within 12" to 18" of the curb. This leads to many vehicles parking 3 to 4 feet from the curb where elevated conditions exist, reducing the roadway width for through vehicles. The picture at the right shows that as the curb reduces to a standard height, vehicles are parked closer to the curb.



3. Building offsets from face of curb less than six (6) feet. Many buildings on corners along Bullard St, Texas St and Arizona St in central Silver City have the structure constructed right on the property line. This typically corresponds to the back of sidewalk along these streets. As a result, the building is frequently constructed in the desired 'sight triangle' for motorists approaching the intersection. These structures restrict intersection sight distance.
4. Frequent one-way streets. The one-way streets benefit on-street parking within the downtown by permitting parking along two sides of the street. If two-way traffic were permitted, parking may have to be eliminated along some streets or restricted to one side of the street, effectively halving the parking supply along those roads.

5. Short city blocks (typically less than 220'). The short city blocks reduce the parking supply because of required intersection offset parking prohibition.

A comparison table of standards was assembled to demonstrate a range of design guidelines and on-street parking information.

Table 7
Comparison of On-Street Parking Guidelines

Criteria	NM Driver Manual	AASHTO/MUTCD
Parking Lane Width	-	7' – 8'
Offset from Curb	18"	12"
Offset from Uncontrolled Intersection or Driveway	20'[1]	20'
Offset from Stop Controlled Intersection[2]	25'	20'
Offset from Signal Controlled Intersection[2]	30'	30'
Offset from Fire Hydrant	50'	15'

1. Offset referenced specifically from a Fire Station driveway.
2. Offset measured from the crosswalk (or extended sidewalk if no crosswalk is striped).

Table 7 indicates that there are differing standards for various on-street parking criteria. These criteria are based upon standard roadside clearance and intersection sight distance. Because of the unique conditions in the Silver City downtown, these criteria may not be applicable to all locations.

Basic geometric design principals should be considered for parking design in downtown Silver City. The primary design consideration is safety for pedestrians and the motoring public. Sight distance must be provided for pedestrians to clearly see past parked vehicles, and drivers must be able to clearly see approaching vehicles along intersecting streets and driveways. Sight distance is the primary design consideration of the intersection and driveway offsets listed in Table 7.

Many streets in downtown have restricted sight distance because buildings are constructed with no setback from the property line. This creates an efficient pedestrian network, but reduces safety with respect to motor vehicles. A positive aspect of the sight restrictions is that it creates an environment where drivers must be more vigilant and drive more slowly, thus the low (15 to 20 mph) posted speeds in downtown have generally good compliance. The slow travel speeds create a safer environment for pedestrians and bicyclists.

Intersections between two-way streets should comply with the AASHTO/MUTCD standards identified in Table 7. Parking should be prohibited for 20'or more along each intersecting roadway to ensure that adequate sight lines are maintained for vehicles from the cross street. Each intersection should be independently evaluated before determining the extent of parking prohibition. Should there be a desire to reduce the restriction distance, construction of curb extensions (bulb outs) could be considered to relocate the stop bar and pedestrian crossing location, and maintain pedestrian safety. (Drainage must be considered during the determination of curb extension applicability.)

Intersections between a two-way street and a one-way street, or between two one-way streets, may be able to reduce the parking offset distance below the values shown in Table 7 where there is a structure with no property line offset located at a corner. Structures, such as buildings, with zero setback restrict the sight lines, therefore, vehicles parked closer to the intersection would not limit sight distance. For example, the picture below shows the southeast

quadrant of the Market St-Arizona St intersection. Arizona St is stop controlled and Market St is uncontrolled (no stop sign). Market St is one-way westbound and Arizona St one-way northbound. Market St has the high curb (in the picture) and has parking restricted for 38' from the intersection return. Arizona St has parking restricted for 35' along the east side of the street from the intersection return. To achieve adequate sight triangle, Market St should have the parking restricted for at least 25', 5' for the sidewalk (an assumed crosswalk width) and 20' for the minimum sight triangle. This could increase the parking potential by 13' or half a vehicle space. Along the east side Arizona St, parking could safely commence at the stop sign, however, it is recommended that a minimum buffer of 8.0' be maintained between the stop sign and the beginning of on-street parking. This minimum buffer corresponds to the design distance that a driver sits behind the front of the car. Assuming that the front of a car stops in line with the stop sign, no vehicle would be parked within the drivers view toward the cross street. The picture to the right shows the inter-section approach along Arizona St.

Intersection control is a critical component of parking design. Uncontrolled intersection approaches, those that do not have stop or signal control, require greater parking restrictions than uncontrolled approaches. The sight distance at these approaches must permit a vehicle from a stop controlled approach to clearly see an approaching vehicle, thus greater corner clearance is required. If an intersection approach is stop controlled, the sight distance required along that leg must ensure that a driver's vision from the stop line is not impeded. If the traffic control changes in the future, parking restrictions must be reevaluated to ensure that appropriate

sight distance remains. This reevaluation also applies to the modification of one-way streets to two-way streets, or vice versa.

Table 8 provides guidelines for on-street parking within downtown Silver City. There are eight criteria for which guidelines are proposed. The 'Parking Lane Width' is the proposed width of a parking lane. Areas with high curbs may require an additional 2' of width, and narrow streets could consider lanes as narrow as 7' (if delivery vehicles are not anticipated). The 'Parallel Parking Space Length' is the length of parking spaces at each terminus of the parking area and the length of the spaces between the terminals. These lengths are used to assess the parking capacity along each block, and to delineate spaces if desired. 'Angle Parking Space Length/Width' refers to the proposed baseline dimensions for angle parking spaces. The actual dimensions vary based upon the skew angle, though the values in Table 8 represent the 90° angle values. 'Offset from Driveway Cut' refers to the clearance offset that should be provided from a driveway cut along a street. A driveway cut differs from a driveway intersection with return radii which should be treated as an intersection. 'Offset from an Uncontrolled Intersection Approach' indicates the offset along a street from an intersection approach which has no traffic control (stop or yield sign). Where a one-way street is the intersecting street, the near (approach) side of the one-way street should maintain the standard sight distance. The far (departure) side of the street may reduce the parking prohibition area because there will be no entering vehicles from the opposite direction. 'Offset Along a Stop Controlled Intersection Approach' refers to the required offset from the stop controlled leg(s) of an intersection. Given that a traveling vehicle must stop, it should have adequate clearance of 8.0' from the stop line (corresponding to the driver's eye position) to see along the intersecting street. 'Offset from a Signalized Intersection' and 'Offset from a Fire Hydrant' are the recommended offset values from AASHTO.

Table 8
Proposed Minimum On-Street Parking Guidelines

Criteria	Two-Way Street Intersection	One-Way/Two-Way Intersection	One-Way Street Intersection
Parking Lane Width	8'	8'	8'
Parallel Parking Space Length	20'/22'	20'/22'	20'/22'
Angle Parking Space Length/Width	18'/9.5'	18'/9.5'	18'/9.5'
Offset from Driveway Cut	5'	5'	5'
Offset Along an Uncontrolled Intersection Approach	20'	20'/10'	20'/10'
Offset Along a Stop Controlled Intersection Approach	20'	12'	12'
Offset from a Signal Controlled Intersection	30'	30'	30'
Offset from Fire Hydrant	15'	15'	15'

Parking space lengths are listed as end space/intermediate space.
Offsets are measured from the crosswalk (or extended sidewalk if no crosswalk is striped).
20'/8' - Offset references with two options apply to the cross street approach/departure sides of the one-way street.

Each of these criteria should be field reviewed for each intersection quadrant before applying these guidelines. A critical consideration is the location of buildings at the intersection, and the

degree to which they restrict sight distance. Where a building restricts sight distance, parking should be allowed to within 2' of the sight obstruction line, provided it is no closer than 8' from a stop sign.

The final consideration of parking standards is signing and marking. Currently, the on-street system does not include pavement markings except for curb painted prohibition. Pavement marking can be used to delineate individual spaces and areas where parking is not permitted. The space markings can be longitudinal to the roadway or transverse; and can be included with either parallel or angle parking. Where parking is to be prohibited, yellow paint should be used, and where it is permitted, white paint should be used. Parking for the physically impaired should be blue, and include blue symbol markings within the delineated space.

All angle parking spaces, whether 90° or 45°, should have each lane clearly delineated with 4" wide painted lines. This will clearly identify where a vehicle should be parked. Where angle parking is installed, the terminal clear zone areas at each intersection should be clearly marked with 4" yellow striping. If 4" striping is used, chevron striping should be included to emphasize the no parking area. An alternative to the 4" striping would be to use 8" striping without the chevron striping. This striping should be either paint with retroreflective beads or thermoplastic with adequate retroreflective characteristics.

The Manual of Uniform Traffic Control Devices (MUTCD) provides guidance on the striping of on-street parallel parking in Figure 3B-21 which may be found in Appendix B. They provide three layouts to delineate all spaces along the street, each of which will require moderate periodic maintenance. One option not presented is to delineate only the parking limits within a block, with a 4" white transverse line painted to delineate each end of the parking area. This line would be painted in conjunction with the termination of the parking prohibition areas at each intersection; it would extend the desired width of the parking area; and would provide additional guidance to drivers where the parking terminals are located. An alternative would be to provide the end lines, and a longitudinal 4" white line to define the parking area width. This longitudinal line would be helpful where there are high curbs. The parking area could be widened in those blocks to accommodate the needed extra width, and would indicate to motorists what parking distance from the curb is acceptable. It would also provide guidance for motorists traveling along the street to define the edge of the travelway. Finally, the longitudinal line could be used for enforcement should a vehicle park too far from the curb.

The community has discussed the need to delineate parallel parking spaces along Bullard St. Based upon the utilization study, it is felt that delineating the spaces will reduce the parallel parking capacity of Bullard St. The weekend counts found nearly 100% utilization between 7th St and Spring St along Bullard St, and two of the blocks experienced utilization of greater than 100% during multiple hours. Implementing the guidelines in Table 8 will likely reduce parking capacity along Bullard St below the estimated level because there are some intersection offsets less than the desired length, and insufficient hydrant offsets. While parking organization would benefit from physical delineation of each space, the resultant capacity would be lower than as it currently exists.

6.0 RECOMMENDATIONS

The recommendations of this report are as follows.

1. Silver City should adopt a series of guidelines for the design of on-street parking facilities in the downtown area. These guidelines should include intersection prohibition offsets, parking space dimensions, and striping and signing considerations. A sample set of guidelines are included in Table 8.
2. Bullard St should delineate the parking areas with 4" white terminal stripes and 4" wide longitudinal stripes the length of the parking area. Individual parking spaces should not be striped to maximize capacity. The width of the parking area should vary from 8' to 10' depending upon the curb heights within each block.
3. Parking prohibition should be considered along one side of the street in the following road segments in the downtown study area. These streets do not currently have adequate width (30') to maintain two parking lanes and a 14' wide travelway.
    a. Yankie St between Bullard St and Arizona St
    b. Market St between Texas St and Arizona St
    c. Kelly St between Bullard St and Texas St
    d. Texas St between Sonora St and San Vicente St
    e. Texas St between Spring St and Broadway St
    f. Texas St between Yankie St and 7th St
    g. Arizona St between Spring St and Broadway St
    h. Arizona St between Market St and 6th St
    i. Pinos Altos St between Spring St and Broadway St
    j. Sonora St

    This could result in up to 86 lost parking spaces. An estimated 91 spaces could be developed off-street within currently vacant property along the downtown streets, with the primary development areas along Spring St, Pinos Altos St, and east of the Bullard St development.
4. Back-in angle parking should be considered along Broadway St between Texas St and Pinos Altos St. The angle parking may be implemented along each side of Broadway St between Texas St and Arizona St, and along the north side of the street between Arizona St and Pinos Altos St. Each of the angle parking spaces should be striped, and as appropriate, some could be designated as small car spaces to optimize capacity. Initially, this should be considered a demonstration project for the community and all striping should be temporary striping. See Appendix A for a schematic of the proposed parking scheme.

    The back-in angle parking will be new to Silver City, and as such, there will be a learning curve for the local citizens. A public information campaign should be conducted to instruct drivers how to negotiate entry into a space. The movement is initially the same as parallel parking, and signing has been developed by numerous jurisdictions to instruct unfamiliar drivers. Installation of such signing should be considered.

5. Construction of curb extensions (bulb outs) should be considered in conjunction with installation of back-in angle parking. These extensions should initially be striped and supplemented with raised pavement markers. If the back-in angle parking is to become permanent, then permanent curb extensions should be installed. The curb extensions will minimize and define the parking prohibition area, and will greatly enhance pedestrian safety by reducing the crossing distance of Broadway St by as much as 50%. The curb extensions should be designed by a registered engineer, with special consideration given to drainage design. Curb extensions may be landscaped and include street furniture.

6. Loading zones should be established east of Bullard St on 7th St, Kelly St, Yankie St, and Spring St to accommodate large vehicle deliveries. Currently, delivery vehicles are parking in travel lanes on two-lane streets which is a safety concern. Established loading zones should be properly signed and marked.

7. On-street handicap spaces should be uniform in size. Existing handicap spaces vary in length from 25' to almost 40'. A length of 25' should be adequate for handicap parking, and the spaces should be fully delineated on the pavement.

8. Expand and enhance bicycle parking within the downtown. Formal public bicycle parking is located at three intersections: Bullard St at Broadway St, Bullard St at 6th St and Yankie St at Texas St. Safety is a concern at the Bullard St at Broadway St and Yankie St at Texas St locations because the parking areas are located within the roadway prism. Bicycle parking should be located behind raised curbing, not at street level. If curb extensions are considered at downtown intersections, a component of the improvements should include incorporation of bicycle parking accommodations within the extensions. This would yield more frequent parking locations and provide greater safety for the cyclist. If curb extensions are not considered, parking should be focused along the east side of Bullard St, with barrier protected areas established along the short roadway segments between Bullard St and Big Ditch Park. A bicycle parking area could also be established within the parking lot at the corner of Yankie St and Arizona St.