

**PARK CITY COUNCIL MEETING
SUMMIT COUNTY, UTAH
NOVEMBER 2, 2006**

PUBLIC NOTICE IS HEREBY GIVEN that the City Council of Park City, Utah will hold its regularly scheduled meeting at the Marsac Municipal Building, City Council Chambers, 445 Marsac Avenue, Park City, Utah for the purposes and at the times as described below on Thursday, November 2, 2006.

Closed Session – City Council Chambers

2:00 p.m. Property, personnel, and litigation

Work Session – City Council Chambers

3:30 p.m. Council questions/comments

3:40 p.m. Parking management review

4:10 p.m. Short range transit development plan alternative update

4:30 p.m. Traffic management issues:

- Traffic management in the Deer Valley Drive roundabout this winter
- Meadows Drive at SR224 – traffic signal, roundabout, and speed limits
- Update on Lucky John Drive school campus drop-off
- Three-way Stop at Monitor Drive and Little Kate Road

6:00 p.m. Public input

No regular meeting.

A majority of City Council members may meet socially after the meeting. If so, the location will be announced by the Mayor. City business will not be conducted.

Pursuant to the Americans with Disabilities Act, individuals needing special accommodations during the meeting should notify the City Recorder at 435-615-5007 at least 24 hours prior to the meeting.

Posted: 10/30/06

See: www.parkcity.org

Note: This future meeting schedule is TENTATIVE and subject to change.
PARK CITY COUNCIL TENTATIVE MEETING SCHEDULE

November 2006

- 9 Snow removal - work
Sundance exterior festival lighting proposal and demonstration - work
Appointment of member(s) to the Historic Preservation Board for terms expiring July 2009
MFL - Park Silly Sunday Market and street closure – work
MFL – Strike the Motherlode and street closure
Park Bonanza District – General Plan amendments – work/public hearing
Ordinance – 550 Deer Valley Loop condominium conversion – Robin
Ordinance – 1243 Empire Avenue condominium conversion – Ray
Ordinance – Crescent Ridge condominium record of survey amendment – Jon
Ordinance – LMC Chapter 2 – Kirsten
- 16 Quarterly goal update and traffic calming update
Special event parking discussion – work 20 minutes - Brian
Canvass of special open space bond election
Bernolfro Annexation
- 17 *Management Team meeting*
- 23 **No meeting**
- 30 Park City Cemetery – work – 20 minutes

December 2006

- 7
- 14 Acceptance of audit report
- 21
- 28 **No meeting**

January 2007

- 4 **No meeting**
- 11
- 16-17 *Tentative – Council visioning workshop*
- 18 **No meeting** – Sundance premiere
- 25

February 2007

- 1
- 8
- 15
- 22

March 2007

- 1
- 8
- 15

22
29

Pending Items:

MOU between Park City and Summit County for Animal Control Services
Talisker Development Agreement
IT support discussion
562 Main Street façade easement
Air quality discussion
Brewpub lease assignment – RDA
Regional bus service SLC

City Council Staff Report

Author: Brian Andersen, CAPP
Data and Contract Analyst
Subject: Parking Discussion
Date: November 2, 2006
Type of Item: Informational – Work Session



PUBLIC WORKS

Summary Recommendations:

Staff recommends the Council review and discuss several parking related items and provide Staff with direction. Staff will incorporate this direction into its recommendations and if required return to City Council later in November.

Description:

Topic/Background:

In November of last year, Staff committed to update Council regarding the integration of the new China Bridge parking structure into Main Street parking operations and to review special event parking rates and regulations. Council directed Staff to operate the garage for one winter season to determine what if any program changes were warranted given the increase in spaces provided. Construction delays did not allow for a full season of operation of the garage. However, Staff believes we have gained enough experience to bring this discussion to Council.

Several parking issues have also been brought to Staff's attention or have been raised during Council public comment regarding: motorcycle parking, public requests for valet service and taxi loading zones, garage operation, preferential (HOV) and employee permits, and special event parking. Staff has researched and will make recommendations on each of these.

For the 2006 Sundance Film Festival and Art Festival, Council adopted increased rates and parking use fees in the China Bridge garage. During the remainder of the year, the China Bridge garage continued to operate under four-hour parking limits with no parking fee. Staff requests direction from Council, and Staff will incorporate Council direction into its recommendations and if required return to City Council during November with final recommendations.

Analysis:

Staff reviewed all aspects of the Main Street parking program and believes that in general the parking system is operating effectively and efficiently with a minimal number of complaints. Staff is seeking direction from Council regarding the following:

1. the motorcycle pilot program;
2. valet service and taxi operation requests;
3. garage operation;

4. preferential parking and permit parking;
5. garage time limits and regulations;
6. special event parking.

Following are the current points of discussion, the implications, and a staff recommendation for each.

1. Motorcycle Parking

In July 2006 Staff received a request from Mr. Alex Butwinski, president of the Park City Motorcycle Club. Mr. Butwinski requested Staff explore dedicated motorcycle parking on Main Street. The main reason for his request is for a secure location for motorcycles which often have expensive, non-securable accessory items.

Staff determined the best approach for this request was to identify any spaces where only motorcycles could fit and run a trial program. Two locations were found and offered to the club: 1) one-half car space just below Miners' Park bulbout, and; 2) concrete lattice in the landscaping south of China Bridge. Both were received positively by Mr. Butwinski.

The manager of the Crosby Collection, Kate Doordan, has indicated to Staff and to Council the space is not amenable to that particular business mainly due to noise issues, and she would like the space removed.

Under the current City parking code motorcycles are allowed to park in any legal parking space. Summer occupancy counts indicated that during peak hours motorcycles comprised 8% of the total vehicles parked on Main Street; motorcycle utilization of Swede Alley was nominal.

The noise generated by a street legal Harley Davidson motorcycle ranges from 85 to 90 decibels. This is similar to a lawnmower which generates 88 decibels. Utah state statute requires motorcyclists to "equip, maintain, and operate in such a manner to prevent excessive and/or unusual noise." (Source: 2006 Utah Motorcycle Operator Manual). Utah code further defines "harmful industrial noise" as: 1) sudden instant temporary noise in excess of 140 decibels; or 2) sustained noise emanating from equipment or machinery at 90 decibels for durations longer than 8 hours (Source: Utah Code 34A-2-501).

Staff believes the vast majority of motorcycles do not violate the Utah state motor vehicle code, and law enforcement of traffic regulations applies to those vehicles that do violate the standard. Staff is sensitive to noise concerns and their potential impacts on business but does not believe motorcycles create a noise impact sufficient to justify the removal of the dedicated motorcycle parking.

While dedicating spaces for one vehicle type is against Staff and industry philosophy of optimizing parking utilization through a shared parking environment. Both locations are not useable for other vehicles.

Significant Impacts: To preserve the Main Street space, it will be necessary to stripe the street on an annual basis in the springtime. Additional signs will be needed for the Swede Alley location (concrete lattice south of old China Bridge garage). Additional staffing is not required. The total annual cost of continuing the program would be less than \$100.

STAFF RECOMMENDATION: Staff recommends keeping both locations permanently available for motorcycle parking, since both spaces are not useable by larger vehicles. Council should advise Staff if changes to the proposed recommendation are preferred.

2. Valet and Taxi

Valet - Occasionally, Staff receives requests from individuals to operate valet service for Main Street utilizing City-owned parking.

In general valet parking is a premium service found primarily at hotels, hospitals, and restaurants where parking is owned by the establishment and located adjacent thereto.

Both City-owned on-street parking and off-street parking would be needed for a successful valet operation; and to manage traffic queuing issues, significant Staff time would be required to manage a valet operation.

Staff experimented with “valet assist” parking during the winter of 1996 and 1997. Even though the service was contracted to a service provider, significant staff time was required to manage the operation. During the experiment, a service provider was employed to stack vehicles in Swede Alley lots, the lower level of Old China Bridge garage, and in the old North Marsac lot and approach. The program required use of the service to access the designated lots and resulted in some additional vehicle accommodation. The operation required approximately five employees and created queuing spillover in Swede Alley during peak evening times.

The challenges for valet in the Main Street core:

- Achieving equitable and effective placement of the curbside valet stands could be unattainable. Placing zones would result in inequity and would likely generate merchant complaints.
- Storage of vehicles, while best kept in one lot or garage, would be needed in several locations along the full street length for effective valet service. This would required dedication of spaces in Brew-pub lot, Swede Alley and Flagpole lots.
- Code changes would be needed to allow operator to conduct business on the street.
- Previous valet parking operations have not been successful.

Staff does not recommend providing this service due to these challenges.

Taxi Drop Zones - At a Council meeting last month, a driver for Stein Eriksen Lodge made a request for removal of parking on one side of Main Street or for dedicated taxi loading zones and for making Main Street one-way. Taxi drop zones are challenging from the standpoint that taxi companies and their clientele generally desire door-to-door service. Geographically dispersed taxi zones in a number sufficient to accomplish this need would be difficult to provide and enforce. As long as taxi companies make momentary stops for service, Staff does not see the need to dedicate valuable Main Street parking spaces to this one use. Staff has explored the concept of making Main Street one-way and continues to recommend against doing this. This is based on a trial program that generated numerous complaints regarding negative impacts upon business and driving patterns.

The discussed valet and taxi programs would reduce the number of parking spaces during the peak evening hours, and empty parking spaces could result during times when parking demand is greatest.

Significant Impacts: Based on experience, valet parking would require significant staff time to manage. Queuing on Main Street could create traffic issues.

Taxi zones would require staff to police or may require additional parking staff to monitor in the evening hours. Empty parking spaces could result for either program during peak times, and towing may be needed to keep the zones clear. Code changes to allow valets to conduct business on the street would be needed for a comprehensive valet program.

STAFF RECOMMENDATION: Staff does not recommend implementing a valet program, establishing taxi drop off zones, or making Main Street one-way. Council should advise Staff if changes to the proposed recommendations are preferred.

3. Garage Equipment

Staff would like to explore a revenue control system concept for the China Bridge Garage. This concept would utilize electronic gates at the garage entries and exits. Gated systems are widely used in the industry to provide cash control auditing and data gathering capabilities.

A gated system would offer the following benefits:

- 1) Visitor accommodation beyond an established time limit (first four hours free concept)
- 2) Eliminate the need for time limit enforcement.
- 3) Provide a revenue control system for special events, and;
- 4) Provide flexibility to accommodate Main Street employees.

Basically, this system would mirror the current treatment in the garage but would allow easy integration of events, and allow visitors the option of staying longer than four hours. A Park City version of this system could be “pay-on-exit” with patrons either taking a ticket or inserting a credit card upon entrance and paying at automated gates on exit. This popular system is called “credit card in, credit card out” and offers one less step in the payment process over ticketed systems. The

credit card option would reduce the amount of cash handled. "Pay-on-exit" systems with a roving garage troubleshooter person would offer the ability to offer quick service and to clean and monitor the garage.

Staff anticipates a gated system for China Bridge will cost approximately \$190,000.

Substantial amounts of cash transactions will occur during major special event paid parking, and this system would enable use of credit cards which would reduce the overall amount of cash handled.

Employee permits could be issued in the form of an access card, and if desired less customer friendly areas of the garage could further be segregated for employee use. Another immense benefit would be the data available (turnover, duration, etc.) from a gate system.

A gated system would reduce staffing requirements for enforcement and paid parking operations during special events and would increase customer convenience by allowing multiple means of payment. Payback could be as little as five years based on event garage parking fees in the \$10-\$20 range

Significant Impacts: A gated system would require a substantial investment in equipment, but revenue could be generated that would offset the cost and provide additional income for maintenance of the parking deck.

STAFF RECOMMENDATION: It is too late to implement this option for the approaching winter season. If Council is comfortable with this concept, Staff plans to research equipment costs in more detail and include a budget request for the equipment as part of the FY2008 budget process.

4. Preferential Parking and Employee Permits

As traffic increases in town, Staff believes preferential parking for carpools/vanpools would benefit the efforts to decrease trip reduction. With no cost for transit service to riders, a higher cost for employee permits would encourage commuters to utilize the free bus service or join a rideshare. This would assist in alleviating some congestion by removing a portion of single occupant vehicles (SOVs).

Individuals would apply for a carpool permit at Public Works by attesting that they will use the permit only when 2 or more occupants are in it. These permits would be issued only to Main Street employees or business owners. They would offer all the benefits of an employee permit (parking beyond the four hour time limit in China Bridge). Initially, Staff recommends using an honor system with periodic monitoring. Permits found to be in violation of program requirements would have pass revoked.

In addition, an increase in employee permits to \$120 annually is recommended which would equate to \$10 monthly. This increase in cost would provide more incentive for employees to ride the bus or rideshare. Staff would incorporate this increase into the 2007 Fee Resolution implementing the new fees in December 2007 when existing permits expire. The increased permit fees would generate additional revenues of approximately \$15,000 – \$16,000 annually which could be utilized to enhance China Bridge maintenance and cleaning.

Significant Impacts: Rideshare permits are defined in the Title 9 Parking Code; therefore no code change is needed to implement. Staff would periodically monitor the use of rideshare permits as part of the current enforcement program. A change to the 2007 Fee Resolution would be required for an increase in parking permit fees.

STAFF RECOMMENDATION: Staff recommends allowing carpools/vanpools with preferential parking in Swede Alley. Staff also recommends raising the price of employee permits to \$120 annually. Council should advise Staff if changes to the proposed actions are preferred.

5. Garage Time Limits and Regulations

Staff intended to monitor the expanded garage and collect data through a full winter season before recommending alternatives to the current garage regulations. When Staff discussed this at Council in November 2006, the garage was under construction. Completion was delayed due to concrete shortages, which did not give Staff the chance to collect anticipated data for the entire winter season. Staff finds that without this data, it is difficult to recommend changes to the current program. Staff plans to research usage patterns and present alternatives during the summer 2007. HMBA president Ken Davis has expressed a desire to keep a priority for visitor parking and has indicated one option for allocating specific parking areas for specific parking users (see Attachment A). Staff agrees parking for visitors should be a priority. Currently the Main Street metered spaces provides the most convenient spaces for visitors.

Significant Impacts: There are no impacts anticipated from continuing the current program.

STAFF RECOMMENDATION: Staff recommends continuing to monitor the management program of 4-hour time limits with an employee permit program in the expanded China Bridge garage. Staff will collect data and return to Council in the summer of 2007.

6. Special Events (Informational Item)

Staff found the implementation of special event rates during Sundance and the Arts Festival did not generate a significant number of complaints. Staff plans to continue those programs and update Council with specifics when changes warrant.

For Sundance, flexing of meter rates similar to last year and the sale of parking in the China Bridge garage is currently being reviewed. Special Event Staff will update Council at on this item its November 16, 2007 meeting.

Department Review:

This document was reviewed by Public Works; Budget, Debt and Grants; Economic Development and Capital Projects; Special Events; Legal; and Public Safety Staff.

Alternatives:

The Council should discuss each of the items as necessary and provide staff with direction.

Recommendation:

Staff recommends the Council review and discuss several parking related items and provide Staff with direction. Staff will incorporate this direction into its recommendations and if necessary return to City Council later in November.

Attachment A

From: Ken Davis
Sent: Monday, October 23, 2006 8:37 AM
To: Brian Andersen
Subject: Re: Parking

Brian,
Thanks for the email.
I do not believe that my thoughts have changed from my statements made last year in our meeting. Parking for our visitors should always be given priority.

I believe that parking for AB permit holders should be restricted to areas away from the most convenient spaces leaving those for our visitors. This could be accomplished by using those against the back wall, in the "old" portion of the garage or some other combination. This would include limiting or eliminating entirely use in the flagpole lot as well as those inside the Gateway for AB holders. And to review the spaces on Swede Alley and the open lot there (I forget what the current status is).

There is a need for more signs. Each entrance should have a LARGE sign stating there is "Four Hr Free Parking" inside the garage. The temporary A frame signs that were used when the garage first opened were great and should be made permanent in some fashion. And, inside there is no reinforcement that the parking is free!

In conclusion, as I stated last year, making changes after the garage opened will be much more difficult. You folks missed the opportunity to make intelligent changes when you would face the least opposition. Now not only will you face angry people who do not want change, but you will have to "train" them to whatever the new rules will be.

Good luck!

Ken

From: Brian Andersen
Sent: Friday, October 20, 2006 9:13 AM
To: Ken Davis
Subject: Parking

Hi Ken,

As previously presented to City Council, I am planning to return to Council in early November with a staff recommendation regarding the regulations in the China Bridge parking structure. I had promised Council last fall to return and discuss this specific topic again this fall. I had hoped to incorporate what you would like to accomplish into that report and how that would benefit the business community. I am looking forward to your reply.

Regards,

Brian Andersen
Data and Contract Analyst

City Council Staff Report



DATE: November 2, 2006
DEPARTMENT: Public Works
AUTHOR: Kent Cashel, Deputy Public Works Director
TITLE: Short Range Transit Development Plan Update.
TYPE OF ITEM: Informational

SUMMARY RECOMMENDATION:

Discuss short range transit plan study elements. Staff will present these elements to the general public in a transportation open house scheduled on November 8th. Staff will return to Council for adoption of a final transit development plan in Early January 2007.

DESCRIPTION

A. Background

In August of this year Council authorized staff to contract with LSC Transportation Consultants, Inc. (LSC) to assist in the preparation of a Short Range Transit Development Plan.

A short range transit development plan is a five year planning document that the Federal Transit Administration (FTA) requires any entity receiving FTA funds to prepare and maintain. This short range transit development plan gathers data and analyzes the following:

- Description of existing system.
- Current and future transit demand in agencies service area.
- Existing system performance.
- Existing system organizational structures.

Once this analysis is complete information is gathered from the general public, public officials, local business community, and transit staff and the following items are developed for the five year planning time frame:

- Transit goals and objectives.
- Service, capital, marketing, and management alternatives.
- Financial sources and uses statement.
- Alternatives feasibility analysis.
- Service, capital, marketing and management recommendations.

The resulting document is a financial and operational plan that will be formally reviewed and adopted by Council and County Commissioners to guide the development and operation of transit services over the next five years.

The Joint Transit Advisory Board (JTAB) is defined in the “Park City and Summit County Interlocal Transportation Agreement”. The board is tasked with providing recommendations on service, scheduling, routes and strategies for transit service development to both the City and County. The membership of this group includes:

- Jim Hier – Park City Council
- Bob Richer – Summit County Commission
- Kevin Callahan – Summit County
- Kent Cashel – Park City

Park City Transit Staff (including Eric Nasset and Darren Davis) provide technical support to the board.

The Joint Transit Advisory Board and LSC have completed the first phase of this study and have identified an initial list of service, capital, marketing and management alternatives that will be included in the study. Staff is requesting that council review and comment on the alternatives list.

Staff will incorporate Council input and present the alternatives to the public at a transportation open house scheduled on November 8th.

B. Analysis

The following items have been identified for inclusion in the study

Service Alternatives

- **Need for More Express service** – Much of the transit riders between Kimball and Old Town desire a quick, direct trip. Currently only one run per hour in each direction provides express service. Existing and future demand may warrant additional express service to reduce travel time for the majority who do not wish to go to neighborhoods such as Silver Springs. Also, a single stop at the entrance of The Canyons may be feasible, utilizing a circulator service to transport passengers to the base of the ski area. The study will explore this service alternative.
- **Need to Serve Additional Areas** – With the rapid growth of outlying areas, expansion of transit into new service areas warrants consideration, both within the City and the County.

Additional areas within the city that will be studied are:

- Empire\Montage
- Quinn’s Jct.
- Year round service on Bonanza Dr.
- Solamere Area

Additional areas within the County that will be studied are:

- Kimball area circulator
 - Jeremy Ranch\Timberline\Summit Park
 - Silver Creek
 - Silver Summit\Justice Center
- **Transit for Special Events** – Park City is home to a growing number of special events including the Sundance Film Festival, the Kimball Art Festival, World Cup Ski competitions, the Park City International Music Festival, and national bicycle events. The need to move people from lodging to events, and to alleviate traffic and congestion problems, requires transit service tailored for these events. Both contracted and in-house services to meet this need will be studied.
 - **Regional Commuter Service** – Commuter service can bring great benefit to communities in terms of traffic reduction and air quality improvements, usually requiring little subsidy by the communities. The study will evaluate the provision of commuter service, such as scheduled buses or a vanpool program, to serve commuters between Park City and Salt Lake City, Kamas/Francis, Coalville, and Heber City. The most efficient method of providing this service will also be studied (in-house versus contracting).
 - **Transit for Seniors** – The level of transit for seniors within Park City appears adequate, but the need for service to seniors outside of Park City throughout Summit County will be evaluated.

Management Alternatives

- **Improved Service Quality** – Park City Transit has a complicated interlined route system which makes each route dependent on the others for on time performance. Interlining means every bus travels every route in the system in sequence. The issue of when interlining is warranted and when it causes problems will be addressed in the study, along with the need for additional changes in schedules or capacity to address service quality issues.
- **Addressing New Development** – Park City and Summit County are experiencing rapid growth, which includes the “Silver Star” high density residential development along the existing Thaynes Route. A methodology for determining when it is appropriate to serve new areas will be identified by the study.
- **Partnering with Planners on Project Review** – A definitive process should be established that ensures Park City Transit works with City and County Planners to ascertain how a project can be transit friendly in its development, and to determine when it is appropriate to require transit amenities or other support as part of the project. The study will explore and make recommendations in this area.

- **Manage Paratransit Ridership** – Modifications to the paratransit program may help to contain operating and capital costs by encouraging those who can use the fixed route to do so. The study will review and make recommendations on the current ADA program.
- **Dispatching for Paratransit** – The current Dial-a-ride service is dispatched by the drivers. While the system works adequately now, the study will determine what the trigger point for employing a dispatcher is.
- **Bus Stop-Shelter Maintenance** – The number of transit amenities maintained by Park City Transit has grown steadily over the years. The study will examine alternatives for a comprehensive maintenance program for passenger amenities including cleaning, trash removal and snow removal. Both in-house and contracting options will be explored.
- **Optimal Institutional Structure** – As transit service in Summit County grows and becomes a larger portion of the total transit budget the methodology used for cost sharing must be continually reviewed and adjusted to reflect this evolving relationship. The study will review the cost sharing methodology and recommend appropriate refinements.
- **Transit Goals, Standards, and policies** – A review will be conducted of the goals, standards and policies of Park City Transit to ensure they reflect current ideals and conditions.
- **Insuring Financial Stability** – Stable, secure funding is crucial in operating an effective transit system. All alternatives will be bound within a sustainable financial plan.

Capital Alternatives

- **Passenger Amenities** – In recent years transit has rapidly expanded, particularly into the County areas. Many bus stops are inadequate in terms of bus stop pads and pullouts, and additional shelters and benches are warranted. The study will explore options for addressing this issue.
- **New Transit Centers** – Of high importance to the County program is a transit center in the Kimball Junction area that can accommodate increased services, reduce transit running times, and improve passenger comfort and security. In addition, a transit center at The Canyons can help support changes to the route structure. The study will identify sites, concept design and estimated costs.
- **Transit Operations Center** – The storage capacity of the existing bus operations/maintenance base on Iron Horse Drive has been reached. To support

expansion in transit services, both improvements at the existing facility (mid-term solution) and a potential new facility (long term solution) need further evaluation.

- **Need for Advanced Technologies** – Automatic vehicle location, bus stop annunciation, signal pre-emption, real-time traveler information and other technologies will be reviewed to determine which are appropriate and cost effective for Park City Transit.

Marketing Alternatives

- **Bus Advertising** – As a tourist destination, Park City Transit's bus advertising has a wide audience that presents numerous revenue enhancement opportunities. The study will evaluate and make recommendations on any warranted refinements in this area.
- **Electronic and Print Media** – The study will review Park City Transit's web site and printed materials and recommend any warranted refinements to these materials.

Significant Impacts

As the demand for transit services continues to grow the City will need to consider new sources of revenue to meet those demands.

One potential new source is the contributions and fees that may result from the Talisker\Montage Development (approximately \$1,000,000 one time contribution and the 0.5% real estate transfer assessment to be utilized for transit and recreation which could generate \$17,000,000 over the next ten years). This study will make recommendations for programming of those funds contributed by the Talisker\Montage development.

Another option for new funding sources would be the levy of an additional .25% transit sales tax allowed under Utah law. This additional levy would take the City up to the transit sales tax cap of .50% and would require approval of the voters in a general election. This additional levy would generate approximately \$1.4 million in annual revenues based upon 2005 collections.

D. Department Review

This report has been reviewed by the City Managers Office and Public Works.

RECOMMENDATION

Review and comment on short range transit plan study elements. Staff will present these elements to the general public in a transportation open house scheduled on November 8th, 2006.

City Council Staff Report

Author: Eric DeHaan, P.E.
Subject: Traffic Discussion
Date: November 2, 2006
Type of Item: Informational



CITY ENGINEER

Summary Recommendations:

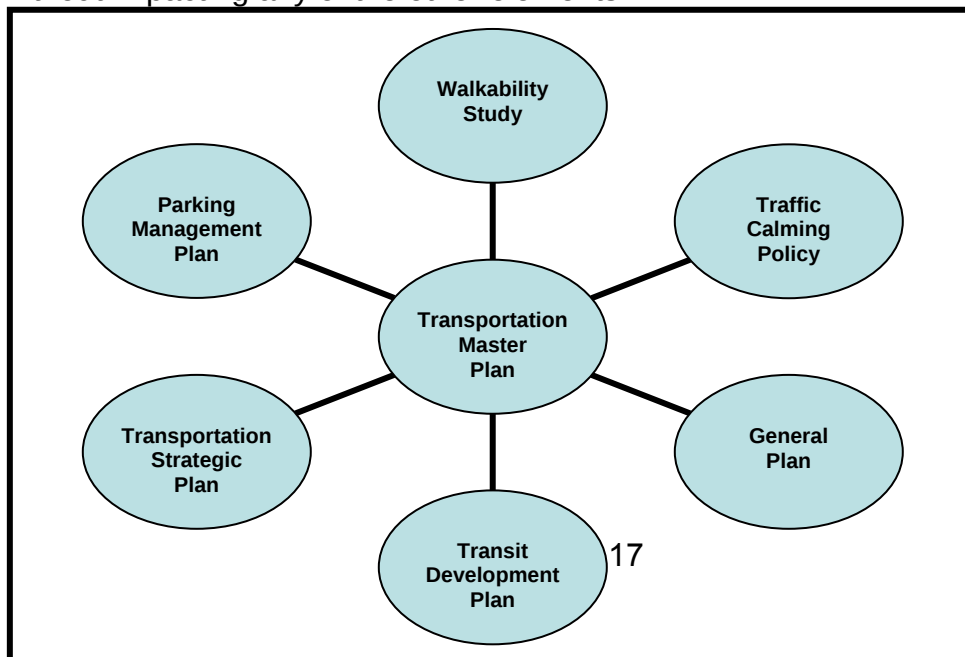
The Staff recommends that the Council discuss several distinct and related traffic issues facing Park City and provide Staff with direction. Please note that there will be more of a traffic calming work session discussion on November 16 that will address other areas in town.

Description:

Topic/Background:

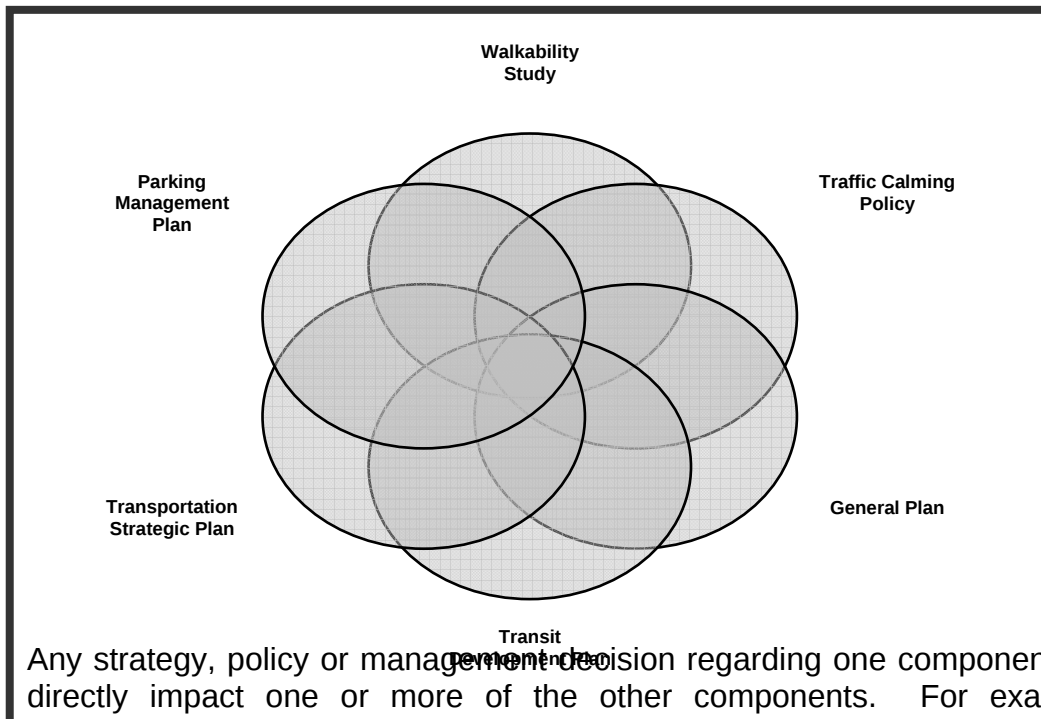
Several traffic issues have been placed on the City's agenda because of our success as a world-class resort community as well as, requests from citizens, actions by the private sector, ongoing projects proposed by developers, and/or actions by other government agencies. The state highways in Park City, S.R. 224 and S.R. 248, face increased traffic from vehicles, from bicycles, and from pedestrians. The resorts and historic Main Street are affected by periodic congestion. Residents are affected by traffic noise. Over the next several weeks City Council will be reviewing and determining policy on the City's General Plan, traffic calming policy, parking management plan, transportation strategic plan, walkability study and transit development plan. These individual elements comprise the City's transportation master plan.

It is convenient and natural to consider each of the elements of the City's transportation master plan as independent and mutually exclusive as is depicted in the graphic below. Once these elements are considered mutually exclusive then it seems logical that strategy, policy and actions can be determined independently for each of element without impacting any of the other elements.



As one begins to work with the transportation master plan it quickly becomes apparent that the individual elements of the plan are not mutually exclusive or independent but are interdependent as is depicted in the Venn diagram below.

Transportation Master Plan



Any strategy, policy or management decision regarding one component will most often directly impact one or more of the other components. For example, should a determination be made to aggressively pursue traffic calming this decision will likely have a negative impact on traffic flow, transit travel times and parking availability.

As City Council determines strategy or policy regarding any one element of the City's transportation master plan (e.g., traffic management) it is critical that these decisions take into consideration the impacts that those decisions will have on other elements of the plan.

Staff needs direction from the Council on several of the following issues as to whether current City policies adequately embrace the identified concerns. Consistent with the City's budget policy, any issues requiring a change in the level of service or potentially impacting the budget will be brought back for consideration during the budget process next spring when they can be reviewed in the context of the entire budget.

Analysis:

Following are the current traffic issues, the implications, and a staff recommendation for each.

- 1. Traffic management in the existing Deer Valley Drive roundabout this winter.** For several seasons the staff has been concerned about the traffic backup that occurs on westbound Deer Valley Drive in the evening after busy Deer Valley ski days. Vehicles queue up waiting to enter the roundabout, causing a backup on about fifteen days per year that can extend all the way back to the Stewpot Restaurant. It is important to note that the Roundabout works efficiently most of the time, that Deer Valley was planned and built with the understanding that traffic backups would occur on the busiest ski days of the year, and that any increased efficiency at the Roundabout would merely transfer the backups downstream to one of the other intersections that similarly backs up during the peak ski days load-out. Our visitors rarely complain about the traffic, since they have just enjoyed one of the best ski days of their lives. Longtime observers of Old Town will remember that the backup used to be at the bottom of Marsac Avenue, and the Roundabout merely transferred the location of the evening queue to westbound Deer Valley Drive. In the long run, structural modifications to the Roundabout will be required to move more traffic through the Roundabout during the peak evening hours. Staff is working with UDOT to secure funding for BY 2011 that may be used to help improve the roundabout and/or Deer Valley Drive. For the coming season, we plan to install temporary visible delineators along the Roundabout lane lines, maintained by the Police Department, to encourage drivers to use both lanes of the Roundabout and therefore minimize stoppages at the Deer Valley Drive westbound leg. The police will periodically maintain a presence at the Roundabout, recognizing that the backup does not represent a safety issue that would justify special traffic direction or operations. The City will not allow Deer Valley Resort to direct traffic at the Roundabout.

Significant Impacts: This winter there will be few impacts to City staff or operating budgets compared to last year. Snow removal efforts may be delayed to work around and/or relocate the delineators. There will also be a predictable backup at the Roundabout after peak Deer Valley ski days. The overall delays will be approximately the same as last year, since backups occur simultaneously at Bonanza, Park Avenue, Kearns Boulevard, and Kimball Junction. This spring, the Capital Improvement Prioritization Committee (CIP Committee) will likely consider a future capital project proposed to modify the Roundabout in an effort to minimize the use of delineators and personnel to manage the backup.

STAFF RECOMMENDATION: The Council should inform the Staff if changes to the proposed actions are desired.

- 2. Meadows Drive at S.R. 224 – traffic signal, roundabout, and speed limits.** Over the past year, numerous requests for a signal at this intersection have been received from citizens. UDOT has not yet warranted a signal at the intersection, but under our Corridor Preservation Agreement a signal probably could be warranted after an appropriate engineering study by UDOT. Citizen concerns about safety are generally not supported by the actual accident history

at the intersection. Park City's engineering consultant, Project Engineering Consultants, feels that a signal is warranted because of volumes. The school buses that stop at this intersection have a very good safety record. The City Council has provided direction to study a roundabout in lieu of any signal, given the visual importance of this intersection in the midst of the open space forming our entry corridor. UDOT has rejected our request to consider a roundabout (see Exhibit A). Pursuing a roundabout at this heavily traveled intersection will involve successfully asking UDOT to modify its published Roundabout Guideline (copy attached) which specifies on page 6 that "Traffic volumes on approach lanes should be approximately equal with similar functional classification and characteristics." Meadows Drive clearly does not meet this requirement at present, and it will be necessary to educate UDOT about successful roundabout installations where relatively minor road legs are incorporated into the design and construction without irreconcilable adverse effects. A related UDOT concern will be the impact of any signal or any roundabout on the S.R. 224 SCATS system that adapts signal timing automatically to surges in traffic conditions. Realistically, modifying a published UDOT guideline such as the roundabout guideline can be expected to take several years to accomplish, but because this entry corridor is so vital to Park City's resort atmosphere the Staff recommends that we take the time to do this intersection correctly. This may require engaging engineering firms with worldwide expertise to commence the process of attempting to change UDOT's mind about roundabouts as well as to quantify the impact of any roundabout on the SCATS system so that the overall flow of traffic on Park City's major entryway remains appropriate for a world-class resort community.

With regard to speed limits on S.R. 224, the 55 MPH limit extends well into the City limits. The speed limit isn't reduced to 40 MPH until just prior to Holiday Ranch Loop Road and then to 35 MPH at Snow Creek Drive. UDOT looks to the private sector, namely the 85th percentile of drivers, to establish reasonable and appropriate speed limits, and according to UDOT's latest speed study, the 85th percentile of drivers regards 55 MPH as the appropriate speed for 224 until the drivers reach the developments and roadside congestion along 224 at Holiday Ranch Loop Road and thence further into town. A roundabout would slow these speeds and therefore the speed limits could be changed in conjunction with a roundabout approval. Other reasons to reduce speed limits, such as pedestrian volumes, schools, and sight distance issues (often the reasons that speed limits are reduced at the entrance to other cities and towns) are not applicable in the case of 224, which has been specifically planned as our protected entry corridor for over 25 years.

Significant Impacts: There will be no immediate changes to the intersection of S.R. 224 and Meadows Drive as a result of the recommended course of action.

STAFF RECOMMENDATION: The CIP Committee will prioritize a capital project for significant planning and engineering funding in support of an effort to eventually obtain UDOT approval of a roundabout at the subject

intersection or have the City pursue federal funds as we did for the Deer Valley Roundabout.

- 3. Resort traffic management.** In July, Police Chief Lloyd Evans prepared a memo regarding traffic management, primarily as it affects the resorts in Park City. A copy of his memo is attached. The Police Department continues to maintain a dialogue with the resorts and other major traffic generators in town and has made considerable progress toward a traffic management overlay plan that will assist with traffic movements at peak skier and event unloading times. The plan was tested in Deer Valley at concerts this summer. The police department also maintains a dialogue with UDOT's Traffic Operations Center so that City traffic impacts on the state highways can be monitored and minimized. Generally our traffic congestion is limited to certain peak hours of certain peak days. Going forward, there will need to be additional traffic demand management coordination with special events and with major traffic generators in order to continue to enjoy an acceptable level of service on the major arterials and collector roads in Park City. An example is the commitment from IHC to alter employee shift times around peak traffic periods.

Significant impacts: Residents and visitors to Park City expect a high level of traffic control support from the Police Department which necessarily draws time away from other commitments, but in a world-class resort community such as Park City there is an expectation that police staffing is an entitlement. In accordance with our General Plan, our roadways are designed for our residents and guests, not for the occasional peak traffic condition. Congestion on our roads will always be with us to some degree, but staff remains confident that the overall performance of our transit, pedestrian ways, and roadways will continue to acceptably support our resorts and our community.

STAFF RECOMMENDATION: This item is for information and discussion.

- 4. Status of Lucky John Drive school campus drop-off.** In response to requests from members of the community and in accordance with a professional engineering recommendation, Park City and the School District have considered a re-alignment of the school drop-off and parking area on Lucky John Drive behind the Park City High School. The area serves the school campus. Staff has heard that there is a lack of parking and also that hazardous conditions exist when several vehicles attempt to use the area as a drop-off. In response, Staff has implemented a temporary formalization of the drop-off using barricades and planters. This arrangement requires drivers to enter the drop-off area in one specific location. Staff also removed the No Parking signs from a portion of the south side of Lucky John Drive in an effort to give drivers attending events such as baseball games an alternative place to park, thus avoiding congestion of the drop-off area. The results of the experimental drop-off seem positive; most observers are supportive of making it permanent, but the School Board has yet to agree to a permanent installation (which is necessary because the drop-off area is largely on school property) or to

commit funding to permanent construction. The staff stands ready to cooperate on permanent construction but we are not sure to what level additional snow removal efforts should be requested of our Public Works department.

Significant Impacts: If the School District requests that Park City fund all or a part of the permanent drop-off construction, Staff will work to develop an appropriate capital project to be considered during the next budget process. As an alternative, fund from CIP# 830, Kearns Boulevard Improvements, could be used since traffic on Kearns is reduced by the Lucky John drop-off. CIP #830 has a \$100,000 appropriation. A drop-off may also have operating impacts on the Public Works Department which should also be considered at that time.

STAFF RECOMMENDATION: The City is working with the School Board to develop a permanent solution. Staff will update the Council when a possible solution has been agreed upon, and will provide information regarding possible budgetary and service-level impacts. The current temporary drop-off will be modified for continued winter trial use.

5. 3-way Stop at Monitor Drive/Little Kate Road There has been a neighborhood request for a three-way stop-sign-controlled intersection at Little Kate and Monitor. At present Monitor Drive has a stop sign but both legs of Little Kate are not controlled since this is a traditional T-shaped intersection. There has also been some discussion about relocating the main vehicular entrance to the Racquet Club opposite Monitor to form a four-way intersection, but there are lingering concerns about possible negative impacts on the Racquet Club from creating this four-way arrangement. There is \$75,000 in the approved capital budget for CIP Project #849, "Intersection Realignment Monitor Dr & Racquet Club". The Traffic Calming Committee has not approved the requested three-way stop condition yet, since the appropriate standard (the Manual on Uniform Traffic Control Devices) states that multi-way stops are not to be used for speed control or to arbitrarily interrupt traffic. Absent a safety hazard such as numerous pedestrians, excessive roadway curvature or sight distance problems, or a large vehicle count, it is probably inappropriate to install a three-way stop arrangement at this intersection since there is simply no need to make Little Kate traffic come to a complete halt. When multi-way stops signs are installed at locations where they are not warranted, stop compliance is poor and there is an increase in vehicle operating costs, noise, and pollution. The Staff is therefore conflicted about installing additional stop signs that will siphon valuable police enforcement time away from intersections with greater pedestrian counts and safety concerns. Staff is willing to consider a multi-way stop sign if traffic conditions change. Staff is concerned that other areas may request multi-way stops and without consistency in applying the MUTCD staff and Council will find it difficult to provide any rationale to approve or disapprove future requests. Any Racquet Club remodeling that would change the main entrance to the Racquet Club could trigger another review of this intersection at that time.

Significant Impacts: Because acceptance of unwarranted stop signs or other regulatory signs by the driving public is low, it will take additional

police enforcement to force people to stop at an unwarranted multi-way stop intersection. There will also be additional noise in the vicinity from accelerating vehicles. There will also be additional pollution in the neighborhood – for example, the City bus will need to come to a complete stop, accelerate briefly to the bus stop, stop again, and then accelerate again. This unnecessary variable motor operation results in additional carbon monoxide generation compared to maintaining a more constant speed.

STAFF RECOMMENDATION: Staff does not recommend installing a multi-way stop sign at this time. The City Manager recommends that the multi-way stop sign be installed.

6. Stock Building Supply's request to close 248 to move an existing structure. UDOT has been discussing a possible operation wherein one of the Anderson Lumber buildings would be moved to Wasatch County. Although it is the staff's current understanding that no permit application has yet been filed, there may be a request to shut down 248 for approximately 24 hours while two utility crews remove and replace traffic signals and overhead utility lines in order for a building to be moved along S.R. 248. The operation would require a temporary ramp to be built in the middle of U.S. 40 so the building could proceed up the southbound on-ramp, across U.S. 40, down the northbound off-ramp, and further along 248 into Wasatch County. The City will have concerns about the inconvenience to our residents and visitors and the possible damage to our landscaping in the medians and along the road shoulders. We intend to object to this operation, recognizing that the final decision lies with UDOT.

Significant Impacts: For the period of road closure, probably about 24 hours and most likely on a Sunday, traffic on 248 would need to be routed around to 224. Inconvenience would occur.

STAFF RECOMMENDATION: The Council should be aware of the Staff's intention to object to this operation, recognizing that the final decision lies with UDOT. No direction to staff is needed unless the Council elects to support the operation.

7. S.R. 248 Corridor Preservation Agreement with UDOT. The staff has met with UDOT to update our existing Corridor Preservation Agreement for S.R. 248 in recognition of the IHC annexation and the monstrous (some 10,000 + additional units) density approvals in Wasatch County. The existing agreement calls for Park City to funnel traffic towards identified intersection points along 248, and in exchange, signals will be warranted at those specific intersections. This process is called access control; an example of where it works is S.R. 224 between Thaynes Canyon Drive and White Pine Canyon Road. An example of an area without good access control is Kimball Junction. The new 248 agreement will call for an IHC-funded signal on 248 near the southwest corner of the Quinn's Recreation Complex and another one at the Old Dump Road intersection, which will likely serve the Talisker Park and Ride and which Wasatch County intends to develop as a collector road. Signals will be pre-approved at Wyatt

Earp, if we want one, and at a location midway between Bonanza and Park Avenue, near existing Homestake Road in response to the many complaints about traffic in Prospector Square we have recently received. This latter location is identified in the Park-Bonanza General Plan Amendments as a desirable location to siphon some commercial traffic off Bonanza Drive, which lacks capacity, onto Kearns, which enjoys excess capacity at that location.

Significant Impacts: The proposed Corridor Preservation Agreement will save capital expenditures in the long run and will provide orderly planning for the developments along 248.

STAFF RECOMMENDATION: The staff recommends that the Council be aware of the pending UDOT Corridor Preservation Agreement and convey any concerns to the staff. The agreement will return to Council at a subsequent meeting on the consent agenda.

8. Additional Engine Brake Control Signs on State Highways. Park City's municipal code regulates engine brakes, also known as Jake brakes. These are the ear-splitting brakes that emit a very loud "WAH-WAH-WAH" sound when operated. We allow engine brakes to be used whenever a legitimate emergency threatens or where roads are particularly steep, namely Ontario Avenue, Aerie Drive, and the Mine Road, much to the dismay of residents living near the historic Mine Road alignment. UDOT has agreed to install additional signs warning truck drivers as they enter Park City's neighborhoods that engine brakes are restricted. The signs will be mounted on S.R. 224 near White Pine Canyon Road and also near the truck escape lane for downhill traffic. The signs will also be mounted on S.R. 248 near U.S. 40. City transit coaches are equipped with transmission retarders that are not engine brakes. Transit operations won't be affected.

Significant Impacts: The Police Department is geared up to enforce the restrictions on engine brakes and have in fact already cited some offending truckers. No staffing impacts are anticipated, and it is hoped that additional notification and enforcement will result in a quieter and even more enjoyable community. Specifically, the signs will allow more stringent enforcement in the Marsac Corridor.

STAFF RECOMMENDATION: If the Council has any questions about engine brakes they can be directed to Staff. Otherwise the new signs will be implemented soon.

Department Review:

These traffic issues and this report have been reviewed by Public Safety, Public Works, Planning, Parking, Budget & Grants, and Engineering. All these departments share a concern with traffic and traffic calming in Park City, but may have a different focus on priorities. Council direction as requested above will help the staff establish our priorities.

Alternatives:

The Council should discuss each of the items as necessary and provide staff with direction. Significant impacts of the recommendations are shown above.

Significant Impacts:

See each item above.

Recommendation:

See each item above.

Attachments:

Attachment A:	UDOT Roundabout letter dated October 24, 2006, and Roundabout Guideline, Utah Department of Transportation
Attachment B:	Traffic Management Discussion, Police Department
Attachment C:	Traffic Calming Administrative Policy/Draft, PCMC
Attachment D:	Crosswalk Placement Grid, PCMC



State of Utah

JON M. HUNTSMAN, JR.
GovernorGARY R. HERBERT
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NIORD, P.E.
Executive DirectorCARLOS M. BRACERAS, P.E.
Deputy DirectorAttachment A
Part I

October 24, 2006

Eric W. DeHaan, P.E.
Park City Engineer
P.O. Box 1480
Park City, UT 84060-1480

RE: Potential Roundabout at SR-224 & Meadows Drive in Park City

Dear Eric,

I am in receipt of your letter dated October 5, 2006 requesting consideration of a Roundabout at Meadows Drive on SR-224. I appreciate the opportunity to review this location as requested.

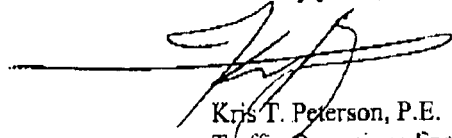
I have evaluated the intersection, as well as the entire corridor between I-80 and SR-248, to determine what type of intersection control will be the most efficient and appropriate. I recognize that Park City desires the installation of a roundabout to enhance the aesthetic appearance of the northern gateway to the city limits as well as a method of traffic calming, effectively reducing the speeds of vehicles approaching the intersection. These are both factors which are in line with justification for a roundabout.

I have also reviewed the geometric and traffic characteristics of the intersection. This intersection is located on SR-224, a relatively high volume roadway with a cross-street (Meadows Drive) having relatively low traffic volumes and good sight distances. Installation of a roundabout at the intersection of a major and minor roadway such as this will result in unacceptable delay to the traffic on SR-224. A roundabout will also unfavorably allow priority to the cross street traffic.

This intersection is located within a coordinated signal network. As you are aware, we have recently installed and made operational an adaptive signal timing system along SR-224 and SR-248. This system (known as SCATS) adapts to real time traffic patterns, thus providing an efficient mobility of vehicles along the system. The system has been installed to assist with the movement of traffic into and out of your city on days of high volumes, specifically during ski season, the film festival and city wide celebrations. A roundabout in the middle of this coordinated signal system will reduce, if not eliminate, the effectiveness of SCATS.

Your request to consider a roundabout at this location is therefore respectfully denied. As agreed in our Cooperative Agreement dated January 25, 2001, we maintain our recognition of this intersection being approved as a potential signalized intersection. If indeed Park City desires to improve the aesthetic nature or implement a type of traffic calming at the northern city boundaries, we would be happy to work with you to accomplish your goals. If you have any questions, feel free to contact me at 975-4827.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Kris T. Peterson', is written over a horizontal line.

Kris T. Peterson, P.E.
Traffic Operations Engineer

KTP/kp

cc: Randall R. Park, Region Two Director
Tam Southwick, Area Traffic Engineer
file

Attachment A
Part II

ROUNDABOUT GUIDELINE

UTAH DEPARTMENT OF TRANSPORTATION

Roundabouts have been used successfully in many cities throughout the world, including several in the U.S.A. They offer a proven form of traffic control that up to this point has not been applied extensively in Utah. There are many locations in the state that could benefit from the installation of a roundabout as an alternative to the more conventional intersection control methods.

This guideline sets forth the procedure required to justify a roundabout as the most appropriate form of control for a given situation. The procedure is intended to provide documented support in the decision to install a roundabout.

INTERSECTION CONTROL ALTERNATIVES

Roundabouts can efficiently handle certain types of intersections with decreased delay and greater efficiency than traffic signals where traffic volumes entering the roundabout are low to moderate, roughly similar and where there are a high number of left-turning vehicles.

There are three alternatives to roundabouts for intersection control. Each alternative will be discussed separately:

Traffic Signals: Are installed only after warrants are met as required by the Manual on Uniform Traffic Control Devices (MUTCD).

- * Traffic signals assign right-of-way, provide an orderly movement of traffic and can improve capacity.
- * Signals are mechanical devices that not only require maintenance but also periodically malfunction. They are also dependent upon electrical power and do not, therefore, provide any control during power failures.
- * Many traffic violations occur at higher speeds so that the severity of accidents is

All-Way Stop Control (AWSC) treats the cross-street movements more favorably, without the wasted time associated with traffic signals. However, the rate at which vehicles may enter an intersection (i.e. headway) under AWSC is relatively low and, therefore, the total intersection capacity is somewhat limited.

A roundabout has no sequential assignment of right-of-way and therefore little wasted stopped time. Left turns are not subordinated to through traffic. Vehicles enter under yield control instead of stop control and therefore have lower head ways and can have higher capacities. There are no electrical components to malfunction.

Roundabouts, on the other hand, have their own limitations:

- * Steady-state entry head ways are shorter at traffic signals because of the positive assignment of right-of way. By using long cycle times to minimize the effects of startup lost time, it is possible under most conditions to achieve higher approach capacities at signalized intersections..
- * Normally the cost for a roundabout is more expensive to implement than a traffic signal..
- * Since roundabout operation is not periodic, it is not possible to coordinate the operations of roundabouts on an arterial route to provide smooth progression for arterial flows. Also they can't be adjusted for varying approach volumes, for time of day or special events.
- * Roundabouts offer the least positive form of control. Each vehicle entering the intersection

CONTRAINDICATING FACTORS

The term "contraindication" is defined in the *Webster's Dictionary* as "something (as a symptom or condition) that makes a particular treatment or procedure inadvisable." A contraindicating factor for selecting a roundabout as an intersection control device would be any condition that might reduce the effectiveness of a roundabout. Keep in mind that almost all intersections have conditions that could be considered as contraindicating factors for any intersection control device, including signals.

Worldwide experience has shown that there are conditions under which roundabouts may not perform well enough to be considered as the most appropriate form of control. These factors must be examined carefully as a part of the justification process. Although these factors may not preclude the choice of a roundabout, they would indicate that there is a potential problem and that mitigation efforts should be detailed in the justification process (see Appendix B). A number of contraindicating factors are listed below:

- * Physical or geometric complications that make it impossible or uneconomical to construct a roundabout. These could include right of way limitations, utility conflicts, drainage problems, etc;
- * Proximity of generators of significant traffic that might have difficulty negotiating the roundabout. For example, a fire station right at the intersection, or an institution that serves blind people might be considered a contraindication;
- * Proximity of other traffic control devices that would require preemption, such as railroad tracks, drawbridges, etc;
- * Downstream bottlenecks that would routinely back up traffic into the roundabout, such as overcapacity signals, freeway entrance ramps, etc;
- * Problems of grades or unfavorable topography that may limit visibility or complicate construction;
- * Intersections of a major arterial and a minor arterial or local road where an unacceptable delay to the major road is created. Roundabouts delay and deflect all traffic entering the intersection which could cause excessive delay to the major arterial;
- * Heavy pedestrian movements that would have trouble crossing the road because of high traffic volumes. This indication would also include special need pedestrian areas (areas with a large number of children, elderly people, etc.);
- * Isolated intersections located within a coordinated signal network. In these situations, the level of service of the arterial might be better with a signalized intersection incorporated into the system;

- * Roadways with reversible lanes for morning and afternoon peak periods;
- * Routes where large combination vehicles or over-dimensional vehicles will frequently use the intersection and insufficient space is available;
- * Areas with a large number of cyclists. Although roundabouts readily accommodate the bicyclist, areas with a large number of bicyclist and insufficient crossing opportunities (due to high traffic volumes) would need additional review and evaluation.

The existence of one or more of these conditions does not necessarily preclude the installation of a roundabout. However, the presence of any contraindication suggests that special attention should be given to the design and operation to ensure that problems are resolved.

REASONS TO INSTALL A ROUNDABOUT

To provide an organized approach to the justification process, a series of categories has been developed, each of which represents a good reason to install a roundabout. A brief description of the justification categories is provided.

Community Enhancement

Projects qualifying for roundabout treatment in this category should demonstrate that a roundabout is an essential part of the community's development plan for a given area, and not just an arbitrary idea. Roundabouts in this category would typically have one or more of the following characteristics:

- * They are often located in commercial and civic districts. Traffic volumes would typically be low to moderate; otherwise, one of the more operationally oriented justification categories would normally be more appropriate;
- * Aesthetics are an important factor in this category. Particular attention will be required with respect to choice of materials, landscaping requirements, etc.; and
- * They will not generally be proposed as a solution to traffic problems. Therefore, any contraindications that would imply either operational or safety problems should be taken very seriously.

Traffic Calming

Projects qualifying for roundabout treatment in this category should demonstrate that there is a need for traffic calming along the intersecting roadways. Such roundabouts are primarily located in residential areas on local roads.

- * In these areas the implementation of a roundabout may reduce speed, reduce conflicts, and may result in shorter crossing distance for pedestrians.

Safety Improvement

Projects qualifying for roundabout treatment in this category should demonstrate that there is a safety problem at the intersection. In addition, it should be documented how the roundabout treatment will improve safety at the intersection. A special review of accident reports and the type of accidents occurring is usually necessary. Examples of safety problems include:

- * High rates of crashes involving conflicts that would be readily resolved by a roundabout (right angle, head-on, left/through, Uturns, etc) by eliminating right angle conflicts and reducing the number of conflict points;
- * High crash severity that could be reduced by the slower speeds associated with roundabouts;
- * Site visibility problems that reduce the effectiveness of stop sign control; and
- * Inadequate separation of movements, especially on single-lane approaches.

Special Condition

Roundabouts have shown the capability of handling unusual geometrics such as intersections with skewed angles and off-set alignments. However, skewed angles and off-set alignments should not be used as primary justification but as a support.

COMMON DATA REQUIREMENTS

The following information will normally need to be obtained for all roundabout justification.

- * Data items needed for a signal warrant study:

Twenty-four hour approach volumes,
Peak hour turning movement counts,
Existing geometrics,
Pedestrian and bicycle volumes, if applicable,
Distance to other intersections,
Crash experience,
Institutional locations: schools, etc.,
Posted speed limits, and
Area population;

- * Physical and right of way features and limitations;
- * Site development features: businesses, driveways, etc; and
- * Community considerations: need for parking, landscape character, etc.
- * Anticipated growth based on governing comprehensive plan;

- * Types of vehicles using the intersecting roadways;
- * Transit routes along intersecting roadway;
- * Adjacent land uses, especially if the roundabout is proposed as a community enhancement project;
- * Access to adjacent properties;
- * Compatibility with adjacent intersections;
- * Availability of power and lighting; and
- * Posted and design speeds along the intersecting roads.

CONSIDERATION OF A ROUNDABOUT

General guidance for the use of a roundabout:

ADT Volumes - Traffic Volume on approach lanes should be approximately equal with similar functional classification and characteristics.

The capacity of a roundabout shall be defined at each entry point. As a general rule, the sum of the circulating volume and the entering volume shall be limited to less than 1800 vehicles/hour for a single lane approach and less than 3400 vehicles/hour for a two lane approach, based on the figures below. The V/C ratio should not exceed .85 for normal operation. (Figure 1 through 8) - (The included worksheet #1 can be used to develop the capacity and V/C ref. for a 1 or 2 lane entry roundabout).

The capacity of a series of intersections shall be based on the delay through the entire segment. Any delay comparison shall consider the average delay for a vehicle passing through the system.

Pedestrians: Special considerations shall be given to areas with high pedestrian demand. In areas where school age pedestrians are expected, the roundabout should not be used unless it can be shown that the pedestrians can be accommodated safely.

In the United States there is little documental information about the operation of roundabouts with 3 or more approach lanes. Therefore roundabouts with more than 2 approach lanes should not be used.

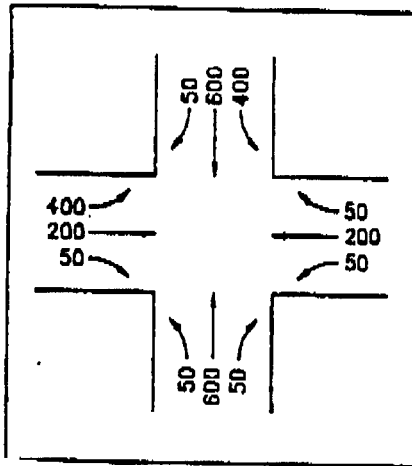


FIGURE 1 Typical turning movement diagram

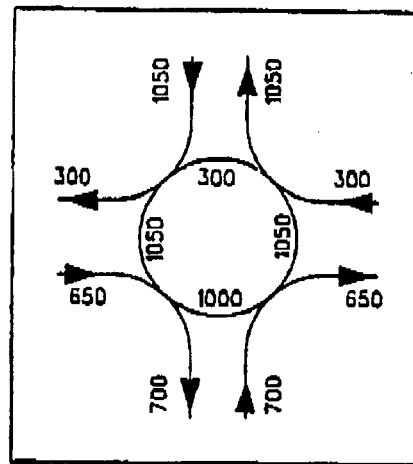


FIGURE 2 Roundabout entry and circulating flows

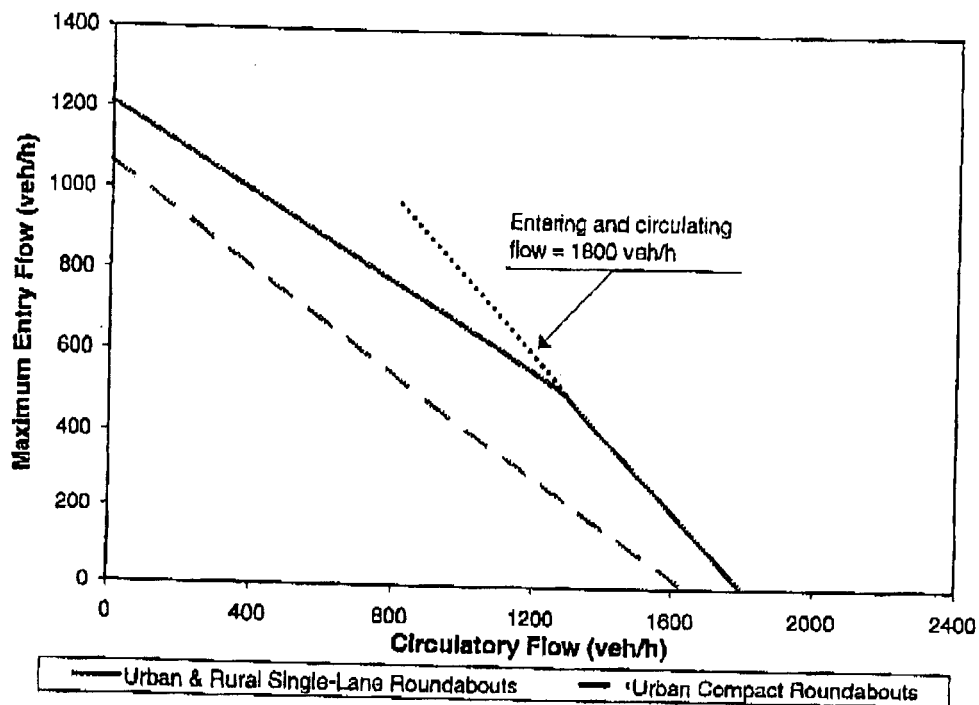


FIGURE 3 Entry capacity for a single lane roundabout with a 13 foot wide entry lane and one circulating lane.

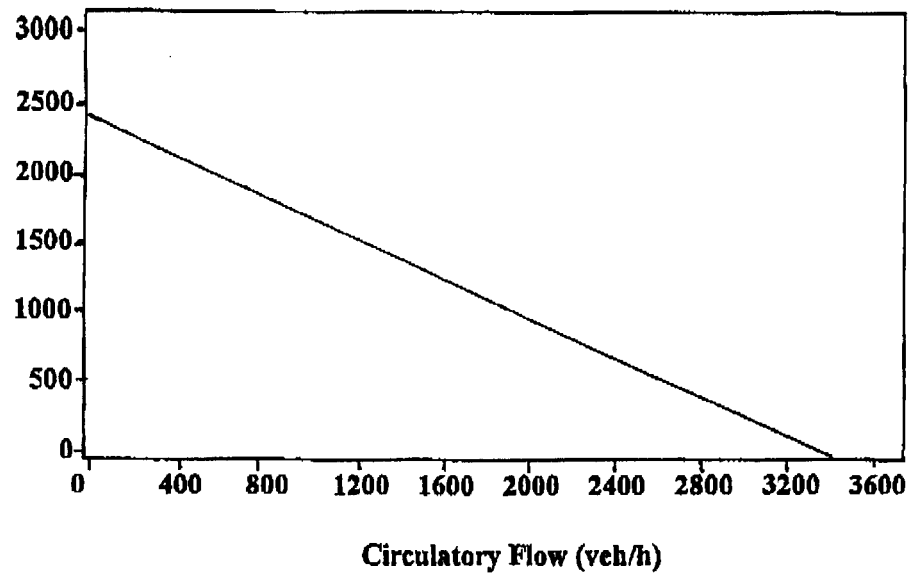


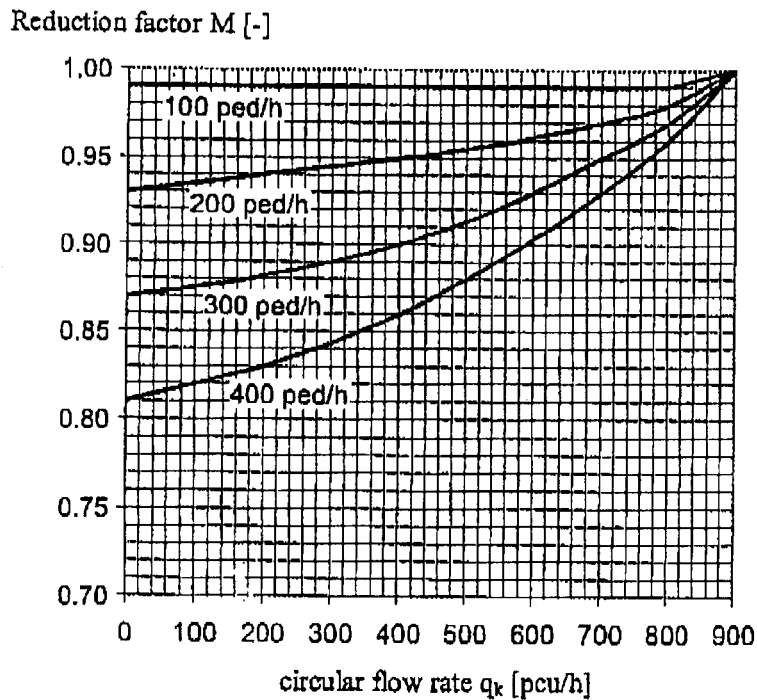
FIGURE 4 Entry capacity for a roundabout with two 13 foot wide entry lanes and two circulating lanes.

Number of vehicle spaces in the short lane, n_s	Factor (applied to double-lane approach capacity)
1	0.707
2	0.794
4	0.841
6	0.906
8	0.926
10	0.939

FIGURE 5 Capacity reduction factors for short lanes.

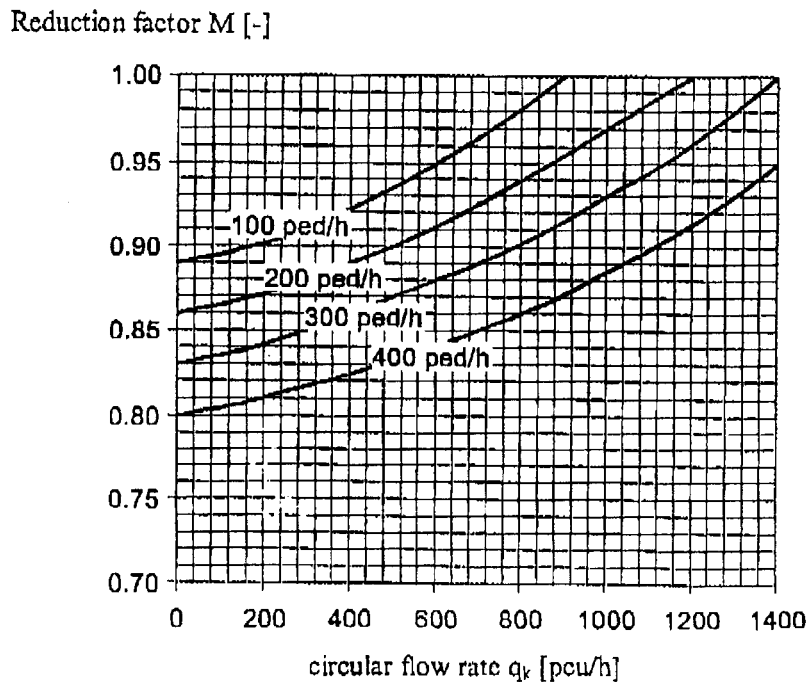
ROUNDABOUTS: An Informational Guide

FIGURE 6 Capacity reduction factor M for a single-lane roundabout assuming pedestrian priority.



Source: (7)

FIGURE 7 Capacity reduction factor M for a double-lane roundabout assuming pedestrian priority.



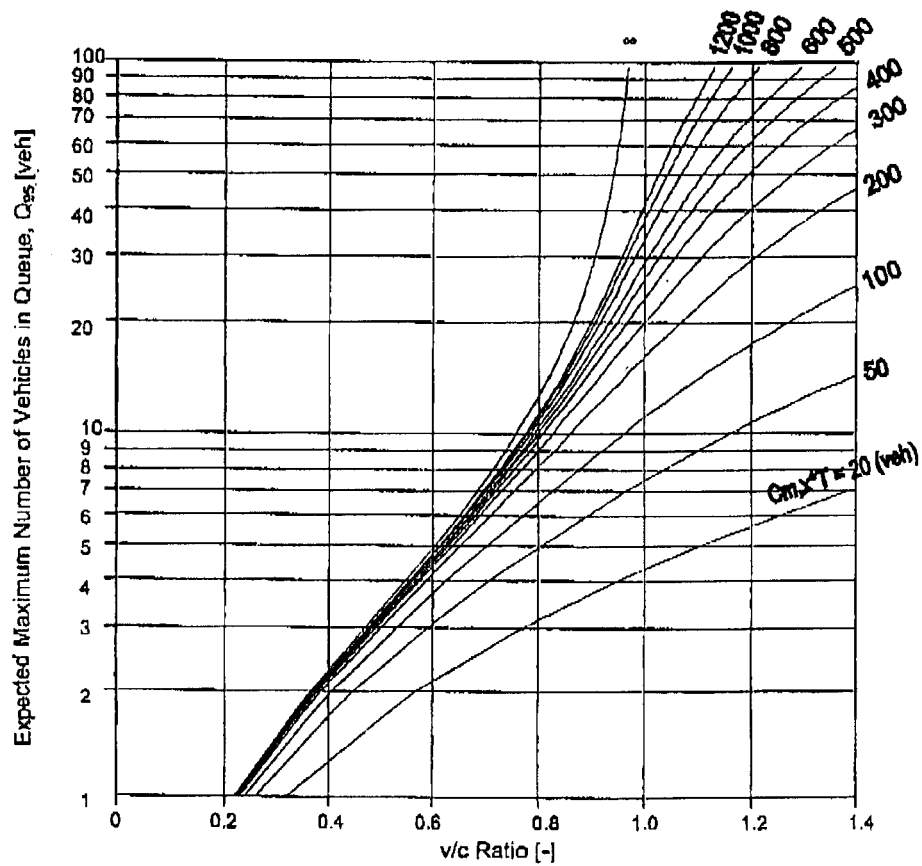
Source: (7)

The effects of conflicting pedestrians on approach capacity decrease as conflicting vehicular volumes increase, as entering vehicles become more likely to have to stop regardless of whether pedestrians are present.

FIGURE 8

- Q_{95} = 95th percentile queue, veh,
 v_x = flow rate for movement x, veh/h,
 $c_{m,x}$ = capacity of movement x, veh/h, and
 T = analysis time period, h ($T = 0.25$ for a 15-minute period).

Exhibit 4-10. 95th-percentile queue length estimation.



Source: (1), (11)

WORKSHEET #1**ROUNDABOUTS: An Informational Guide****Worksheet Aid for Four-Legged Roundabout Performance.**

Location							
Analyst		Date		Traffic Volume Basis			
Movement		Contribution to Circulating Volume					
Direction	Volume	NB Entrance	WB Entrance	SB Entrance	EB Entrance		
NBL			1.0		1.0		
NBT			1.0				
NBR							
NB U-TURN			1.0		1.0		1.0
WBL					1.0		1.0
WBT					1.0		
WBR							
WB U-TURN		1.0			1.0		1.0
SBL		1.0					1.0
SBT							1.0
SBR							
SB U-TURN		1.0		1.0			1.0
EBL		1.0		1.0			
EBT		1.0					
EBR							
EB U-TURN		1.0		1.0		1.0	
CIRCULATING VOLUME							
ENTRY VOLUME (L+T+R+U)							
ADJUSTED VOLUME (factor for trucks & bicycles)							
BASE CAPACITY (compact/single/double)							
ADJUSTED CAPACITY (factor for short lanes & pedestrians)							
VOLUME/CAPACITY							
No. OF LANES REQUIRED							
DELAY /VEHICLE							
AVERAGE QUEUE							
95% QUEUE							

Justification for a Roundabout

A roundabout shall be justified based on the following:

Capacity Analysis shall be conducted to determine the level of service (delay) for a roundabout compared to a traffic signal or other traffic control devices. The analysis shall be performed based on the information in this guideline and by the use of Rodel or Sidra Computer Simulation process or in the case of single lane approaches, the Highway Capacity Manual (HCM) process can be used.

This analysis shall compare the level of service based on the delay encountered and each analyzation point using the delays identified for each level of service as indicated in the HCM.

April 20, 2000

MEMORANDUM



To: Tom Bakaly, City Manager
 From: Chief Lloyd D. Evans, Sr.
 Subject: **TRAFFIC MANAGMENT DISCUSSION**
 Date: July 6, 2006

POLICE DEPARTMENT

Staff Recommendation

Staff recommends that, in connection with the SCATS system and the two resort parking staffs, we develop a traffic management overlay plan that would assist with traffic movement at peak skier and special event unload times in the short term. And further, in the long term, staff will continue to work with the Transportation Committee, the City Engineer's office and UDOT to establish traffic management controls for peak skier unload and special events.

Analysis

Traffic management has been widely discussed over the past year based on the increased traffic volumes generated by the ski resorts during peak season and special events. The question of the Police Department's role in providing officers in intersections to direct/control traffic movement during peak skier and special event unload times has been one of the discussion topics. However, deciding how to manage traffic flow to and from our City boundaries is a broader discussion involving a number of stakeholders.

At present, traffic unload from the resorts and in-town events is regulated by traffic signs, intersection configuration (round-about) and traffic signals that are in place most of which is controlled by UDOT on State Highways SR224 and SR248. To alter the current system, a plan would need to be developed as an overlay to the current system, which is certainly possible. Due to the configuration of the streets that lead to and from the resorts and the Main Street business district, in combination with the relatively short distance between traffic control signals leading out of town on both SR224 and SR248, control of a single intersection would not be adequate or accomplish the overall goal of reducing the congestion and wait time when traffic is exiting the resorts and the Main Street Business District. Once one intersection is controlled, all of the "down stream" intersections would also need to be controlled or backing and delays would still occur.

For an effective peak season unload traffic management overlay plan to be established, a coordination of controls for all intersections within the City limits on both SR224 and SR248 would need to be put in place, which also would affect the entire SR224 corridor traffic flow.

On March 20th, 2006, City Council adopted the Entry Corridors Transit\Transportation Strategic Plan. Following adoption of the strategic plan, staff formed the Entry Corridors Transportation Management Team. This cross functional team is comprised of members from Engineering, Public Relations, Planning, Special Events, Police, Economic Development, Trails, Transit and Budget divisions. This team is tasked with implementing the Entry Corridors Transit\Transportation Strategic Plan including researching, developing, and implementing a comprehensive transportation management plan for Park City's Entry Corridor (SR224 from the round-about north to the City boundary, SR 248 from US-40 to SR-224 and Bonanza Drive).

From this Team, Lt. Phil Kirk developed a law enforcement committee to coordinate agencies in addressing the SR 224 and SR 248 corridors traffic issues. Included in this

committee are UDOT staff who work directly with the Traffic Operations Center (TOC). Recently UDOT, through the TOC, implemented a new traffic control system in the Park City area called SCATS which stands for Sydney Coordinated Adaptive Traffic System. This system allows for real-time adjustments of traffic signal timing through the use of intersection detectors to adaptively modify cycle length, splits and offsets. The system utilizes IP communications to the TOC for monitoring and data collection.

Included in this report are two documents ("A" & "B") from UDOT. "A" is a memorandum describing SCATS and "B" is a report from Mark Taylor, UDOT Engineer, concerning the 4th of July traffic signal operations using SCATS. A separate attachment is a product brochure of SCATS for information purposes.

As well, a work group was initiated, lead by City Engineer Eric DeHaan, to discuss the round-about on Deer Valley Drive in an attempt to capture some "out-of-the-box" ideas on how to plan, modify or reconfigure, either temporarily or permanently, this area to allow traffic to flow more consistently during the peak skier and special event unload. Currently, product investigation on more reliable traffic cone/candle-stick makers is underway to assist with this coming season's traffic flow in that any modification of the round-about will need to be coordinated with UDOT, which is likely to take more time than is available for any permanent adjustment for this season.

Last ski season, the Police Department worked with both Deer Valley Ski Resort and Park City Mountain Resort to develop traffic plans for unload of their parking lots. Adjustments to travel patterns and establishing controlled exiting from parking lots by signs and personnel placement achieved some good results. However, we observed that the overall effectiveness of these plans relied on consistent monitoring of lots by resort personnel. Without the physical presence of resort staff, signs and traffic control devices (cones) were disregarded causing a break-down in the unload plan. We will again this year work closely with the resorts and their parking staff members to establish and use the parking lot unload plans.

Although the Police Department's current philosophy is to NOT use police officers as traffic control devices in intersections unless necessary when an emergency exists or to further protect the public welfare, we do, for large events such as the Arts Festival, control intersections with officers. This is to accommodate access control rather than to accommodate and facilitate traffic movement and not to facilitate an increase in speed of traffic flow. However, the department recognizes the need for discussion and planning in this area.

cc: Mayor and City Council

Attachments (2 documents)

Attachment "A"

Re: SCATS (Sydney Coordinated Adaptive Traffic System)

To: Lt. Phil Kirk

From: Mark D. Taylor, P.E.
Signal Systems Engineer
Utah Department of Transportation
Traffic Operations Center
2060 South 2760 West
Salt Lake City, UT 84114-5790
Office: (801) 887-3714
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We had two observers (John Haigwood - TransCore Consultant installing the SCATS system; Keith Wilde, - UDOT traffic signal manager) in the Park City area for the 4th of July observing traffic conditions with the new SCATS (Sydney Coordinated Adaptive Traffic System) just deployed on the Park City traffic signals. Overall, they were very impressed with how it was able to "adapt" for special events and still maintain signal progression through the corridors.

Attached are the detailed observations. Please note that assistance can be used by officers or volunteers to help control pedestrians at the unsignalized pedestrian crossing on Bonanza at Iron Horse Drive. Peds would maybe let only one or two vehicles go through before they take right of way, thus causing Southbound vehicles to back up into the Deer Valley/Bonanza signal. Recommendation is to control the pedestrians and have them cross in groups.

While we will be present in the Park City area periodically through normal and special events to monitor and fine-tune the system, the SCATS system gives us the ability to have the system respond in real time to unpredicted traffic fluctuations and adapt as necessary. Therefore, manual intervention from both the police officers and UDOT is not necessary.

We really appreciate the interest in the SCATS system, partnering and working jointly with us in achieving an efficient transportation system in the Park City area. Please call me at any time (office at 801)887-3714 or cell at (801) 514-5726 with any concerns or questions you may have.

My role is dealing solely with traffic signal timing and operations on UDOT's 1000 traffic signals and ramp meters statewide. Others in our department (such as Tam Southwick) deal with all the traffic engineering issues in Park City (excluding traffic signal timing).

Listed below is a summary of SCATS in Park City

UDOT has recently installed the Sydney Coordinated Adaptive Traffic System (SCATS) in the Park City area including along SR-224 to Kimball Junction. The system utilizes real-time information collected from intersection detectors to adaptively modify cycle length, splits and offsets. The system utilizes IP communications to the Traffic Operations Center located in Salt Lake City where the central server is located.

Real-time operations and data collection can be remotely monitored by any laptop with the SCATS Access software on it via either an internet VPN or dial-up connection.

The system has been configured to minimize delays within the Park City downtown area during normal traffic conditions, while maintaining the ability to efficiently accommodate traffic surges that are commonly associated with skiing or Park City events.

The Kimball Junction area has been configured to ensure sufficient phase time is always provided to the variable turning movements associated with the shopping traffic surges. Special attention has also been given to the high-volume northbound left-turn movement at Kimball Junction by providing smooth coordination from the northbound movements at Winter Sports Park and Landmark Blvd.

Sincerely,

Mark Taylor

ATTACHMENT "B"

RE: SCATS & Park City Traffic Flow During July 4th Activities

To: Mark Taylor, UDOT Signals System Engineer

From: Keith Wilde, UDOT Traffic Signal Manager

The SCATS system worked well with no changes. These are my observations.
Keith

July 4 Parade Observations

1st drive through evaluation trip began 12:00 Noon Traveled SB on SR224 from Kimball Junction to Deer Valley Drive Observed no congestion, except at Deer Valley. Found very reasonable operation. Parade floats observed SB at Deer Valley from parade route in Park City downtown, some people leaving. Signal at Deer Valley had lots of ped commotion and was only moderately congested.

Return trip NB Observed no congestion, found very reasonable operation.

2nd trip SB on SR224, EB at Kearns, SB at Bonanza, WB at Deer Valley. No concerns observed until Ped Crossing on Bonanza at Iron Horse Drive. Southbound vehicles on Bonanza backed up into signal at Deer Valley. Peds would maybe let one or two vehicles go through before they take right of way. Pedestrian control measures would help. Have seen this problem at this location for other events.

Traffic backed WB from Deer Valley past Bonanza. Took 2 to 3 cycles to clear. Ped interference to WB through traffic greatly limits W to N right turn (the only WB movement with any significant traffic at this signal).

The NB travel to Kimball Junction was very good. No real choke points. Average speed 50 mph.

3rd trip SB on SR224. Upon approaching Kearns at 1:05 PM, it was immediately obvious the traffic had cleared out.

4 July Fireworks Observations

9:00- 10:13 p.m. Observed light traffic everywhere. Traffic light with easy flow.

10:13 p.m. Fireworks ended

10:24 p.m. Headed EB on Kearns, NB on Bonanza, WB on Deer Valley, NB on SR-224

Backing from Park Avenue to Bonanza. Cleared in 2 cycles.

Backing from Kearns NB. Nearly cleared in 1 cycle (was last car to not clear in 1 cycle, and would have made it with ease except for pedestrian crossing was activated mid-block). Kearns had good splits to accommodate NB demand.

SR-224 performed well north of Kearns with average speeds of 45 to 50 mph.

Turned around at I-80 to go SB.

10:45 p.m. Arrived at Kearns. Traffic virtually gone.

TRAFFIC CALMING ADMINISTRATIVE POLICY

Park City, Utah

October 2006

Draft

INTRODUCTION

Standard:

Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction.

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

Park City Traffic Calming Committee (TCC) will follow the current edition of the MUTCD except where engineering studies and traffic programs in other cities may be used to justify a change in warrants and application.

Speed Limits

Speed limits are based on travel time and safety. In residential areas, travel efficiency is given a lower priority. Speed limits set arbitrarily low are ignored by neighbors, compliance is poor and the Police do not have the resources to strictly enforce. Residential streets in Park City will be posted at 25 mph. The posted speed limit shall be within 8 miles per hour (MPH) of the 85th percentile speeds. Traffic engineering studies are required to justify a higher or lower speed limit. Passive measures such as adding guide lines (edge striping) and narrowing driving lanes to ten (10) feet may be used to lower traveling speeds. Neighborhoods may request physical changes to the roadway to reduce speeds. Physical changes shall follow the Traffic Calming Policy adopted by the City Council July 15, 2002.

Driver Feedback Signs (DFS) are electronic signs that provide the driver his/her current speed and the posted speed limit. DFS should only be used on major through streets in residential areas where the 85th percentile speeds are in excess of the posted speed limit by 10 or more mph. DFS may be installed in other areas if special circumstances exist and a traffic engineering study supports the installation.

Guide Lines

Guide lines are edge marking added to a roadway on both sides of a roadway to give the visual appearance of a narrower driving area. Studies have shown a reduction of 1 to 2 mph can be anticipated.

Children at Play

The TCC frequently receives requests for "Slow-Children at Play" signs. Federal Standards discourage the use of "Children at Play" signs. There is a wide spread false belief that traffic signs provide added protection. Studies have shown there is no long term reduction in speed. The TCC does not support the installation of "Children at Play" signs but do recommend if residents are concerned, they should purchase a "Children at Play" sandwich board or sign for display in their yard.

Crosswalks

The TCC has adopted a less stringent warrant developed by Fehr and Peers for Park City than recommended in the MUTCD for crosswalk in residential areas. A copy is attached.

Residential Multi-way Stops

A stop sign is an effective traffic control device when used at the proper place under appropriate conditions. A stop sign is used at an intersection to assist drivers and pedestrians in determining who has the right-of-way. Multi-way stop signs are used at intersections when traffic volumes on all approaches are approximately equal and at intersections where "warrants" justify. These "warrants" have been established by the U.S. Department of Transportation based on the expertise and experience of transportation engineers nationwide. These warrants are published as part of the Manual on Uniform Traffic Control Devices (MUTCD) by the Federal Highway Administration.

Per the MUTCD Multi-way stops are not to be used for speed control or to arbitrarily interrupt traffic. When multi-way stop signs are installed at locations where they are not warranted, stop compliance is poor and there is an increase in vehicle operating costs, pollution, and noise. Well-developed, nationally accepted guidelines outlined in the MUTCD consider the amount of traffic at an intersection, the length of time traffic must wait to enter an intersection, and the safety of an intersection (number of stop sign preventable accidents).

Almost none of our local streets would meet be able to meet the warrants (500 vph, 5 accidents per year & more than 40 mph speed limit) at this time. The TCC is looking at a less stringent warrant system used successfully in other cities. Our traffic calming consultant has reviewed and indicated it was doable with some minor changes.

DRAFT

Park City Procedure for Crosswalk Placement at Uncontrolled Locations

