Town of Goffstown

TOWN OFFICES
16 MAIN STREET • GOFFSTOWN, NH 03045

Date: October 10, 2008

To: Board of Selectmen

From: Stephen B. Griffin, AICP
Planning and Economic Development Coordinator
and
Village Planning Committee Chairman

Subj.: Village Planning Committee Report

On June 16, 2008, the Board of Selectmen voted to establish a Village Planning Committee to review the Master Plan and Corridor Study and to make recommendations to the Board of Selectmen on design elements for the Goffstown Village Area.

On July 14th, the Board of Selectmen appointed members to their Committee. The committee, in turn, met ten times over the summer and fall in order to complete its report.

The Committee's report is attached.

Sincerely submitted,

Stephen B. Griffin, AICP
Planning and Economic Development Coordinator
and
Village Planning Committee Chairman

Town of Goffstown

TOWN OFFICES
16 MAIN STREET • GOFFSTOWN, NH 03045

REPORT TO THE BOARD OF SELECTMEN

From

Board of Selectmen's
VILLAGE PLANNING COMMITTEE
October 20, 2008

PLANNING AND ECONOMIC DEVELOPMENT

(603) 497-8990 - Ext 117
FAX (603) 497-8993
sgriffin@ci.goffstown.nh.us

Town of Goffstown
TOWN OFFICES
16 MAIN STREET • GOFFSTOWN, NH 03045

REPORT TO THE BOARD OF SELECTMEN
from
Board of Selectmen's Village Planning Committee
October 20, 2008

Table of Contents

Town of Goffstown

TOWN OFFICES
16 MAIN STREET • GOFFSTOWN, NH 03045

EXECUTIVE SUMMARY

The Board of Selectmen voted to establish a Village Planning Committee to review the Master Plan and Corridor Study and to make recommendations on design elements for the Goffstown Village Area. Many roads in the village area are scheduled for repair and/or reclamation in the next several years. The plan is to coordinate the roadwork with the overall design of the village and coordinate the work around Goffstown's 250th Anniversary Celebrations in 2011. The committee, therefore, reviewed the Master Plan relative to traffic flow, sidewalks, pedestrian crosswalks, intersections, streetscapes, and parking.

The Village Planning Committee, representing a broad range of interests and expertise, included Selectmen representative Vivian Blondeau, Cynthia Boisvert, John Denoncourt, Michael Lawler Catherine Przekaza, Planning Board representatives Lowell Von Ruden and James Raymond, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, School Board representative Keith Allard, Fire Chief Richard O'Brien, Police Chief Patrick Sullivan, Public Works Director Carl Quiram and Economic Development Council representative Dan Reidy.

The Committee determined that its primary recommendation to the Board of Selectmen was to base design decisions for this corridor and its intersections on the Goffstown Master Plan objective of allowing through commuter traffic, but not in a way to be detrimental to the Village and its functioning, and generally to utilize traffic calming techniques to slow traffic, thereby providing for pedestrian safety and comfort, as well as for vehicular safety. In its review, the Committee considered car, truck and school bus traffic, high school traffic, local and commuter needs, as well as parking and access needs for businesses, churches and area residents. These were all overlaid with pedestrian needs for convenience and safety and the design objectives of a desirable community.

After reviewing the benefits and disadvantages of both traffic control methods, the Committee strongly recommends the use of roundabouts, together with other traffic calming techniques, rather than traffic lights, at the corridor's major intersections. The Village Planning Committee looked at several alternatives for improving the intersections in the Village area, including road widening, signalization and roundabouts, as well as various traffic calming techniques. The Committee concluded that road widening by itself would not address the current problems and, by encouraging faster through traffic, would worsen the impact of traffic on the Village. The Committee, therefore, looked at signalization and roundabouts as the most feasible techniques to address the traffic issues.

More specifically, the Committee's consensus is that for intersections requiring either signalization or roundabouts, that roundabouts are favored because of: (1) increased safety for the pedestrian, as well as for vehicles, from slower speeds and from using the splitter island for pedestrian safety, (2) less physical impact by requiring less land area, and less need for the public taking of private property, (3) less traffic stopping and waiting delays, thereby lessening the environmental impact of idling vehicles, as well as (4) meeting Goffstown's Master Plan objectives (a) allowing through

commuter traffic, but not in a way to be detrimental to the Village, and (b) generally to utilize traffic calming techniques to slow traffic, thereby providing for pedestrian safety and comfort.

The one exception to this is the Main/Elm/High/North Mast intersection where, to limit the need for public taking of private property, traffic calming techniques are recommended, in lieu of a roundabout.

Primary traffic calming techniques used at this intersection, as well as throughout the corridor, include bump-out curbs, raised-table crosswalks and on-street parking on alternating sides of the street. Bump-outs shorten the crosswalk length and thereby shorten pedestrian's exposure time and distance to moving vehicles. The perception of a narrower street encourages slower speeds. The raised-table crosswalk is slightly higher than the street, has a smooth walking surface bordered by a rough textured surface strip, and a pedestrian activated warning light. By these techniques, the driver has a visual, tactile and audio alert of a crosswalk, insuring that he is aware of the pedestrian. Alternating the side of the street for on-street parking both slows traffic speeds for the parking and avoids a straight road, also encouraging slower speeds.

Lastly, recommendations for the streets between these intersections include traffic calming techniques and landscaping. Specific recommendations for these streets vary depending on their right-of-way widths and other specific local conditions.

While explanation and more detail is provided in the report, a summary of typical street and intersection planning recommendations follows:

- North Mast Street:
  Angled parking on alternate sides of the street at its western end,
  Parallel parking on both sides of the street at its eastern end,
  Sidewalks on both sides of the street,
  A series of raised-table crosswalks, and
  Landscaped areas between sidewalk and roadway planted with canopy or decorative trees.

- Main/High/Elm/North Mast Streets Intersection:
  A series of raised-table crosswalks,
  Bump-out curbs, and
  Traffic islands.

- Main Street:
  Angled parking on alternate sides of the street,
  Parallel parking where angled parking is not practical,
  Sidewalks on both sides of the street,
  A series of raised-table crosswalks,
  Bump-out curbs, and
  Landscaped areas in and behind the sidewalk planted with canopy or decorative trees.

- **Church Street:**
  Parallel parking on alternate sides of the street,
  Sidewalks on both sides of the street,
  A series of raised-table crosswalks,
  Bump-out curbs, and
  Landscaped areas behind the sidewalk planted with canopy or decorative trees.

- **Pleasant/South Mast Streets Intersection:**
  Continuation of parking, raised-table crosswalk and landscape treatment from the bridge to East and West Union Streets, and
  A roundabout as proposed by McFarland-Johnson at the Pleasant/South Mast Streets intersection.

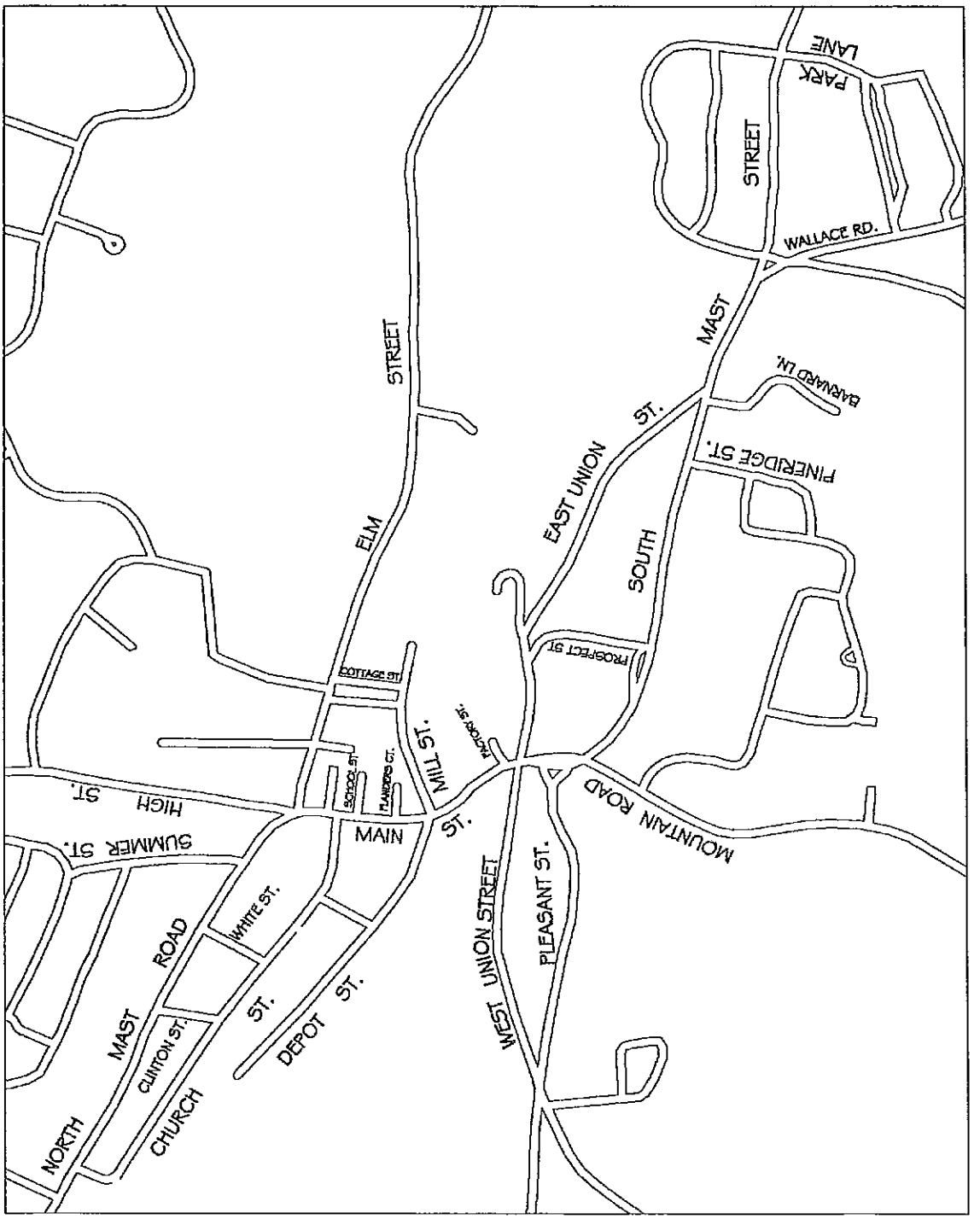
- **South Mast Street:**
  Parallel parking on the north side of the street,
  Sidewalk on the north side of the street,
  A series of raised table crosswalks,
  Bump-out curbs, and
  Landscaped areas between the sidewalk and roadway planted with canopy or decorative trees.

- **Wallace Road/South Mast Street Intersection:**
  A roundabout as proposed by McFarland-Johnson and modified by abutter meetings.

This plan of quality construction and landscaping improvements, taken as a whole, will strengthen Goffstown's Village businesses, institutions and residential neighborhoods in a safe, low impact, pedestrian comfortable manner, compatible with the Village's existing pedestrian scale and design character.

Town of Goffstown

TOWN OFFICES
16 MAIN STREET • GOFFSTOWN, NH 03045



Area Map of Street Names

North

Committee Creation
On June 16, 2008, the Board of Selectmen voted to establish a Village Planning Committee to review the Master Plan and Corridor Study and to make recommendations to the Board of Selectmen on design elements for the Goffstown Village Area.

Committee Membership
On July 14th, the Board of Selectmen appointed members to the Village Planning Committee. Membership included:

Member	Representing
Michael Lawler	Public
John Denoncourt	Public
Cynthia Boisvert	Public
Catherine Przekaza	Public
Vivian Blondeau	Board of Selectmen
Keith Allard	School Board
Lowell Von Ruden or James Raymond	Planning Board
Dan Reidy	Economic Development Council
Robbie Grady	Goffstown Main Street Program
Stephen Griffin	Planning & Economic Development Coordinator
Carl Quiram	Public Works Director
Patrick Sullivan	Police Chief
Richard O'Brien	Fire Chief

Sandy Rowe (Goffstown Truck Center, Inc., Safety and Training) and Terri Modesto (Goffstown Truck Center, Inc. Terminal Manager), while not Committee members, were invited to participate, and did attend four of the Committee's meetings. Catherine Whooten, also not a member, attended two meetings.

Committee Meetings
The committee met eight times over the summer in order to complete its report. Meeting dates included:

Monday	July 21, 2008
Monday	July 28, 2008
Monday	August 4, 2008
Monday	August 11, 2008
Monday	August 18, 2008
Monday	September 8, 2008
Monday	September 15, 2008
Monday	September 22, 2008
Monday	September 29, 2008
Monday	October 6, 2008

Committee Purpose:

Board of Selectmen voted to establish a Village Planning Committee to review the Master Plan and Corridor Study and to make recommendations to the Board of Selectmen on design elements for the Goffstown Village Area.

Many roads in the village area are scheduled for repair and/or reclamation in the next several years. The plan is to coordinate the roadwork with the overall design of the village and coordinate the work around Goffstown's 250th Anniversary Celebrations in 2011. The committee, therefore, reviewed the Master Plan traffic flow, sidewalks, pedestrian crosswalks, intersections, streetscapes, and parking.

The Master Plan and Corridor Study

Completion of the Master Plan Update 2006 was adopted by the Planning Board on September 21, 2006. The Board at this time was composed of Chairman Jo Ann Duffy, Vice Chairman Lowell Von Ruden, Selectman Representative Nick Campasano, Richard Georgantas, James Raymond, Tim Redmond and Board Alternates Douglas Brodeur and William E. Zackeroff.

The Route 114-114A Corridor Management Plan was adopted as part of the Master Plan Update 2006. The Planning Board adopted The Goffstown Village Plan on November 30, 2006, as the Master Plan Update 2006's first amendment.

In summary, the Master Plan Update 2006 made the following recommendations relevant to the roads and intersections in question:

1. Overall:
    a. Through commuter traffic should be directed through the Village, be allowed to pass through, but not be catered to in any way that would be detrimental to the Village's function or to its pedestrian friendly character.
    b. Traffic calming techniques should be utilized to slow traffic speeds, and thereby provide for pedestrian safety and comfort.
    c. Promote continuity and interconnectivity of streets and/or parking areas, to allow easier circulation of traffic, bypassing busy intersections in an acceptable manner.
    d. Promote continuity and interconnectivity of pedestrian walkways.
    e. Reconstruct streets and sidewalks and rehabilitating landscaping as required, including street trees.
    f. Utilize pedestrian friendly design.
2. North Mast:
    a. Utilize an esplanade treatment that incorporates street trees on both sides of the road.
    b. 5-foot wide asphalt sidewalks.
    c. Add curbing, separating traffic and pedestrians.
    d. Add a gateway sign for the Village, at its western end.
3. Main/Elm/High/North Mast Intersection: No specific plan was proposed.
4. Main Street:
    a. Work to consolidate existing disorganized and overly generous curb cuts.
    b. Use of narrower lanes, wider sidewalks and bump-out curbs, all favoring the pedestrian.

c. Minimum 6-foot wide concrete sidewalks and landscaping, including street trees.
d. Utilize permanent crosswalks.
e. Utilize angle parking on opposite sides to provide parking in a traffic-calming manner.

5. Church Street
   a. 5 or 6-foot wide concrete sidewalks on both sides and landscaping, including street trees.
6. Pleasant Street/Mast Road Intersection:
   a. Development gateway treatment, potentially a new village common, in lieu of the disjointed configuration of the existing traffic islands
7. Mast Road:
   a. Reconstruct street and rehabilitate its landscaping as needed, including street trees.
   b. Utilize 5-foot wide asphalt sidewalks, both sides.
8. Wallace/Mast Roads Intersection:
   a. Realign intersection with signal or roundabout.

Committee Discussion and Recommendations:

1. Introduction

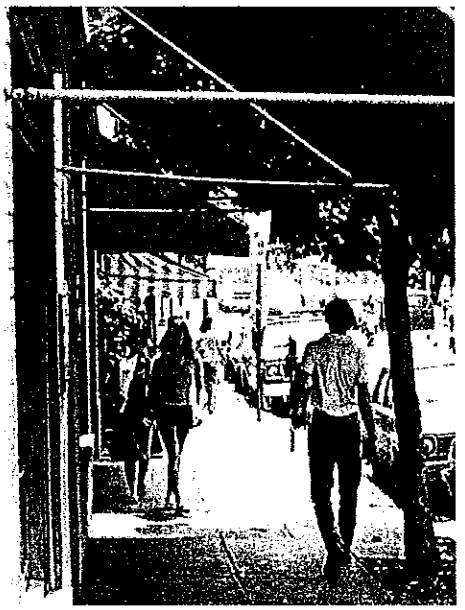
This report and its recommended planning solutions deal only with the existing road, Route 114 through Goffstown's village center and its intersections and are not engineered solutions. Additionally, these recommendations are only one part of a many part solution. Other parts included, but were not limited to, an educational effort for use of roundabouts, extension of park & ride opportunities to Weare, a rail trail bridge over the Piscataquog River leading to Maple Avenue School, encouragement for employee parking at the least utilized parking locations, utilization of the federal Safe Routes to School program, encouragement of fewer car drop-offs at elementary schools and encouragement of 2-person car pooling to the high school, and continuing Planning Board site plan approvals responding to its village planning goals.

2. Overall Village Character

Overall village character, as relating to streets, was discussed. The primary medium to describe the desired character was photographic, and the three following photographs best illustrate the Committee's consensus.

Illustrates the desired overall design quality utilized within the Village.

Illustrates the residential neighborhood's desired character.



Illustrates the commercial district's desired character.

3. Roundabout vs. Signalization Intersection

The Village Planning Committee has looked at several alternatives for improvements to the intersections in the Village, including primarily road widening with additional through and turn lanes, signalization and roundabouts. The Committee concluded that road widening by itself would not address the current problems of corridor entry from side streets, and by encouraging faster through traffic, would worsen the impact of traffic on the Village. The Committee, therefore, focused on signalization and roundabouts as the most feasible alternatives to address the traffic issues. The Committee looked especially at the Main/High/Elm/North Mast Street intersection, the Pleasant/South Mast Streets intersection, and the Wallace Road/South Mast Street intersection. After reviewing the benefits and disadvantages of both traffic control methods, the Committee strongly recommends the use of roundabouts, together with other traffic calming devices, rather than signalization. The following summarizes the reasons for the Committee's conclusion.

The USDOT Roundabouts: An Informational Guide notes that roundabouts offer an alternative to stop control or signalization at physically constrained intersections and helps improve safety problems and excessive delays at minor approaches.

The McFarland-Johnson Mast Road/Wallace Road Intersection Improvements study notes the same issue of a physically constrained intersection, and that the signalized intersection should have two lanes approaching from each direction. This lane, for stacking, is longer than the roundabout's splitter island, hence, more land is required for signalization. Secondly, the pedestrian crossing with signalization requires a dedicated phase, causing a greater traffic delay while not providing the pedestrian refuge safety of crossing through the splitter island. This study also notes that the roundabout will force drivers to slow down, as the roundabout approach design speed is approximately 20 mph.

The Fire Chief reports that a roundabout may take 30-40 seconds more time for his emergency vehicle to clear than does a signalized intersection with pre-emptive capability. Even with a preemptive capability, the intersection must be either cleared, or there must be the space of an extra lane for by-passing stopped vehicles. The Police Chief, on the other hand, reports no additional response time, as he requires his personnel not to enter an intersection unless it has been visually cleared. Jim Raymond noted that planning journals have reviewed this situation and concluded that without traffic calming devices, the risk to other vehicles and to pedestrians is greater than the delay caused by emergency vehicles slowing through an intersection. Other reports indicate less delay in response time.

Roundabouts are more environmentally friendly and are being recommended in the Governor's NH Climate Change Policy Task Force committee current draft report to minimize vehicle idle time, compared to signalized intersections.

The Master Plan objective is to allow through commuter traffic, but not in a way to be detrimental to the Village and its functions, and generally to utilize traffic calming techniques to slow traffic, and thereby providing for pedestrian safety and comfort.

Signalized intersections, in contrast, do not address the goals of the Village Plan as effectively. Traffic signals create breaks in traffic by requiring long traffic queuing during the red light cycle, which is not appropriate in the village environment and which result in greater environmental degradation from vehicle idling; do not allow for left turns movements without additional light cycles, lengthening the queuing times; create a much less safe environment for entering traffic, especially with the increasing trend of cars running yellow and red lights and the greater likelihood of head-on and side-on accidents; are more expensive to construct and maintain; and require a greater need for the public taking of private property.

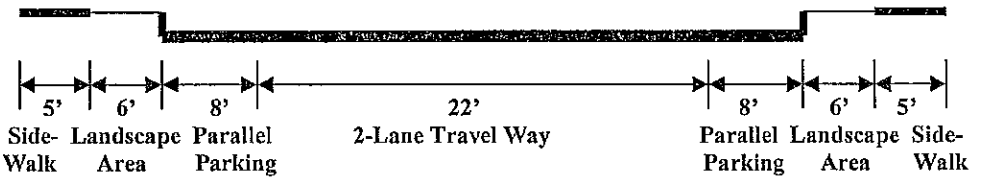
In conclusion, the Committee's consensus is that for intersections requiring either signalization or roundabouts, that roundabouts are favored because of: (1) increased safety for the pedestrian, as well as for vehicles, from slower speeds and from using the splitter island for pedestrian safety, (2) less physical impact by requiring less land area, hence negative impact on adjacent property and less requirement for the public taking of private property, (3) less traffic stopping and waiting delay, as well as (4) meeting Goffstown's Master Plan objectives (a) allowing through commuter traffic, but not in a way to be detrimental to the Village, and (b) generally to utilize traffic calming techniques to slow traffic, and thereby providing for pedestrian safety and comfort.

It is also the Committee's consensus that the opticon system to activate an emergency vehicle warning should be included at all three major intersections under consideration, not withstanding their final design.

4. North Mast Street

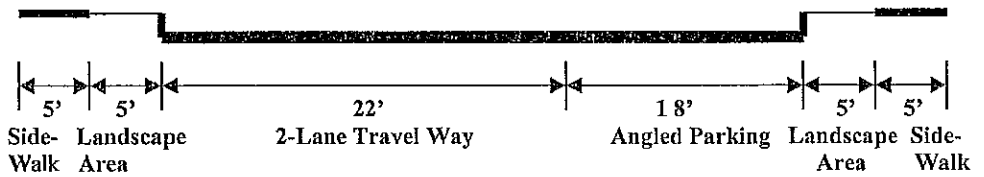
North Mast Street is one of the major Village entries and will set the design tone of the Village. This entry should be designed as an esplanade, incorporating street trees on both sides of the road. The right-of-way is sufficiently wide (60') and the existing structures are generously setback.

- Existing Design Cross-Section



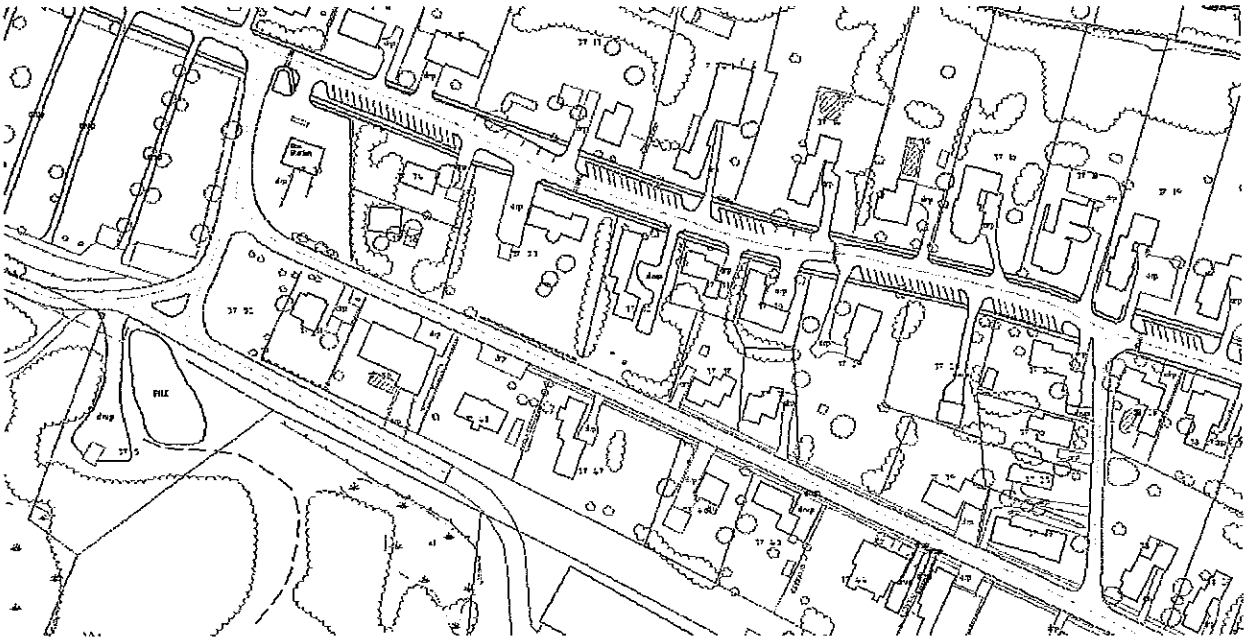
The existing design is now minus the curb and gutter, which should be added with reconstruction. A 38-foot curb-to-curb width is narrow enough to achieve an esplanade feel with the planting of shade trees. Between the Main/High/Elm North Mast intersection and White Street, within the business section of the Village, on-street parking should be maximized, at the expense of additional traffic calming techniques.

- Traffic Calming Cross-Section



NOTE: Alternate the availability of angled parking, by block.

Because North Mast Street is a straight stretch of road, almost ½ mile in length, additional traffic calming techniques are desirable where practical. More specifically, however, the area between the Main/High/ Elm/North Mast intersection and White Street is somewhat commercial in nature so that the solution with parallel parking on both sides is most appropriate. The area between White and Church Streets, however, is more residential in character and possesses more opportunities for off-street parking. Hence, the traffic calming technique of alternating the side of the street with on-street parking, while widening the landscaped area opposite, creates a roadway which is not a straight shot from one end to the other, while still retaining some on-street parking. The parking in this section should be angled, as on Main Street. In this way, the perception of Main Street continues through the entire village, removing the existing sense of isolation that a business on North Mast Street currently has. At the same time, the amount of available on-street parking remains essentially unchanged. This technique also provides opportunities for multiple bump-outs and pedestrian crosswalks, as on Main Street, slowing traffic and increasing vehicular and pedestrian safety.



North Mast with Traffic Calming Treatment

5. Main/High/Elm/North Mast Streets Intersection

This intersection serves through commuter traffic as well as local Village traffic circulation. Its primary traffic problems include (1) the inability of High Street southbound traffic to turn left into the continuous North Mast/Main Street flow, and (2) the inability of Elm Street west bound traffic to turn left into the continuous North Mast/Main Street flow. The two other related concerns are (1) the difficult, unsafe pedestrian street crossing on all of the streets due to long walking distances, coupled with traffic speed and volume, and (2) the potential loss of parking, private parking and public open space from any solution.

Accident Data

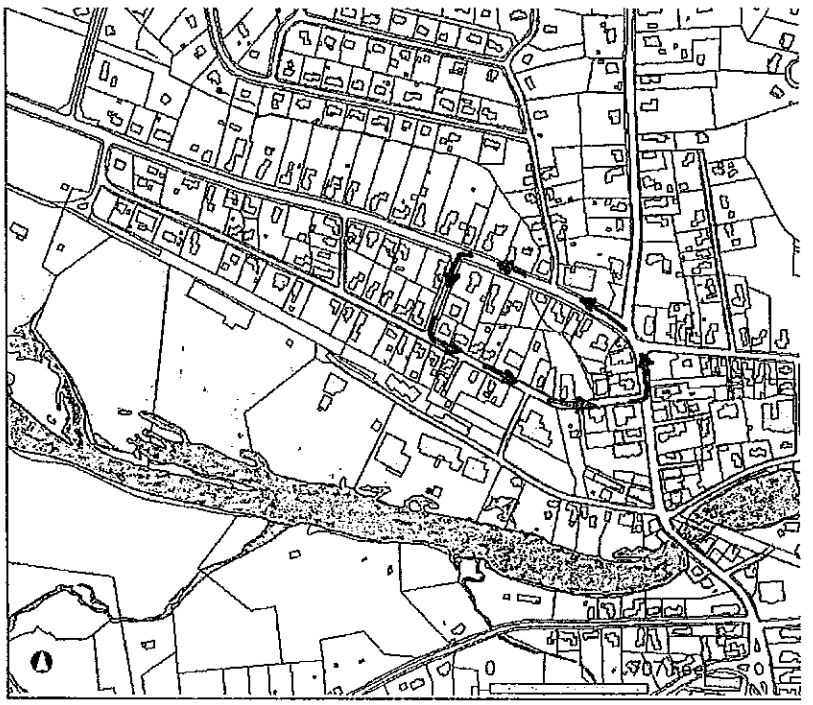
Year	2005	2006	2007	2008	Total
North Mast & High Streets	3	1	2	2	8
Elm & Main Streets	8	7	9	0	24

NOTE: Accident data does not include cause, type or severity of accident.

The Committee reviewed a number of potential solutions, looking at vehicle volumes, speed and accident data, as well as the impacts that a solution might present and its potential for actually solving the problem.

- The 1970's By-Pass Option
  This alternative was to by-pass this intersection and the Village center. It was reviewed and removed from further consideration due to its extremely high cost, lack of available land for its construction and the fact that it would by-pass the Village.

- One-Way Loop System
  A one-way loop system would utilize Main Street in a northerly direction, North Mast to the west, south on White Street and east on Church Street.



This solution would be a lower-cost alternative that would solve the left turn problems at Elm and High Streets by requiring only right turns. This solution, however, does not have traffic-calming characteristic, hence it would not create gaps in the traffic flow, and potentially, therefore, might not allow Elm and High Street traffic entry during the PM commute. The Elm and High Street traffic could enter during the AM commute when most of the flow would be on White and Church Streets. From the pedestrian's point of view, this solution's lack of traffic-calming characteristics encourages higher speeds, thereby lowering its level of safety. Additionally, one-way systems tend to be inconvenient for the user of the Village's commercial core. The Village customer will often find that the desired destination is in the opposite direction. While this experience was not true in Keene, a college town, it did prove to be the problem in Laconia.

Alternative loop situations were also discussed. These might be to utilize Clinton Street, all of Church Street, extended Depot Street or a new road across from Summer Street. All of these had the same problems, which were evident in the smaller loop. Additionally, utilizing a greater portion of Church Street changes the street's character from residential to commercial thoroughfare, contrary to the Master Plan and harmful to that residential character.

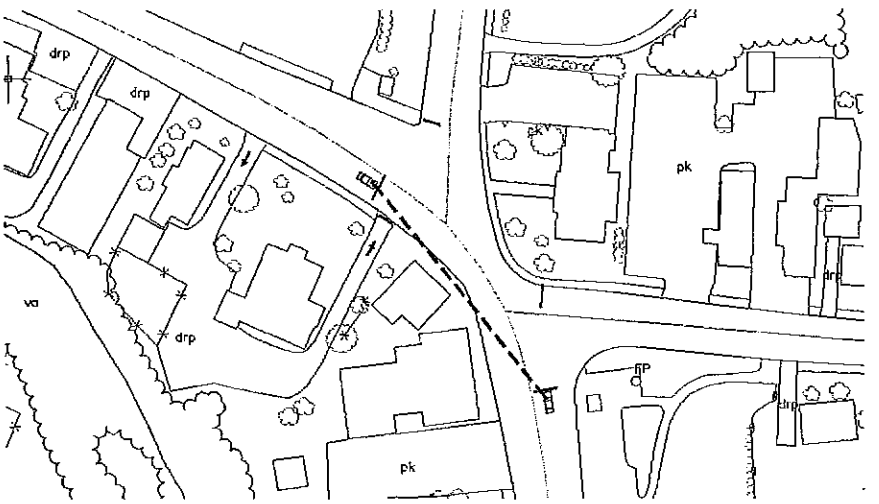
The question of trying the less costly solution first was also discussed. The consensus was that the Committee could not recommend either (a) undertaking an undesirable solution just because of less cost, or (b) teaching the traveling public, both local and commuter, a traffic pattern which might not be retained.

- The 1996 NHDOT Traffic Signal Intersection

  This solution would solve the vehicle turning and entering problems, but at a high cost and with large physical impacts. Pedestrians could also safely cross at the light cycles. The issues, when presented by DOT, included a high cost and a substantial taking of property, including the library's lawn and the town common, in order to provide the required two lanes entering from each leg of the intersection. Additionally, it harmed the accessibility for The Bank of New Hampshire and Sully's Market as their entries were now too close to the intersection, and for the same reason, required the removal of on-street parking south to School Street. At the time of its presentation, the business community found this alternative unacceptable.

- A 4-Way Stop Intersection

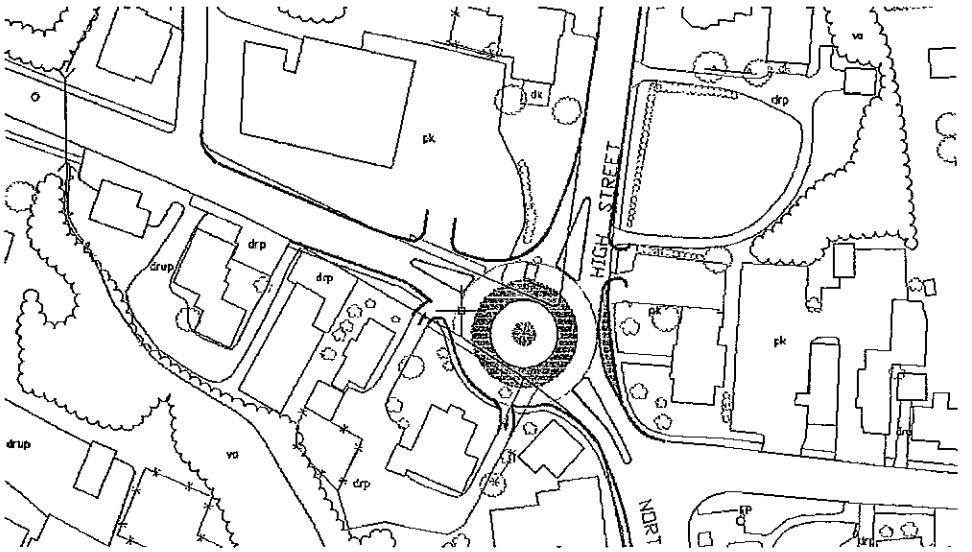
  This alternative would be to make all the legs a "stop" condition, thereby creating breaks in the flow of traffic, thereby allowing Elm and High Street traffic to enter the road system. This alternative was judged as unacceptable because of the long distance between the various stop lines, approximately 200 feet, and the curvature of North Mast to Main Street. This excessively lengthy intersection would mean that drivers could not easily see each other to judge driver intent, and the curvature would allow for more visual obstructions to be present. This solution was judged, therefore, to be unsafe. Additionally, while appearing to inherently assist the pedestrian by stopping traffic flows, the driver would probably be distracted from the pedestrian by the previously mentioned unsafe vehicle situation.



Poor Sight Distance

- North Mast/Main/High Streets Roundabout Intersection

  This alternative would call for a roundabout directly south of Elm Street as illustrated below.



North Mast/Main/High Street Roundabout

This moderate-cost alternative appears to have only a modest negative impact. It requires the purchase of some land, but no buildings. It would require the relocation of the Lions Club's popcorn stand, and the church would be required to reverse its one-way driveway, exiting before the roundabout. Parking for the blue house south of the church would probably be retained on its southern side. This alternative would not, however, hinder Main Street parking, as would other alternatives.

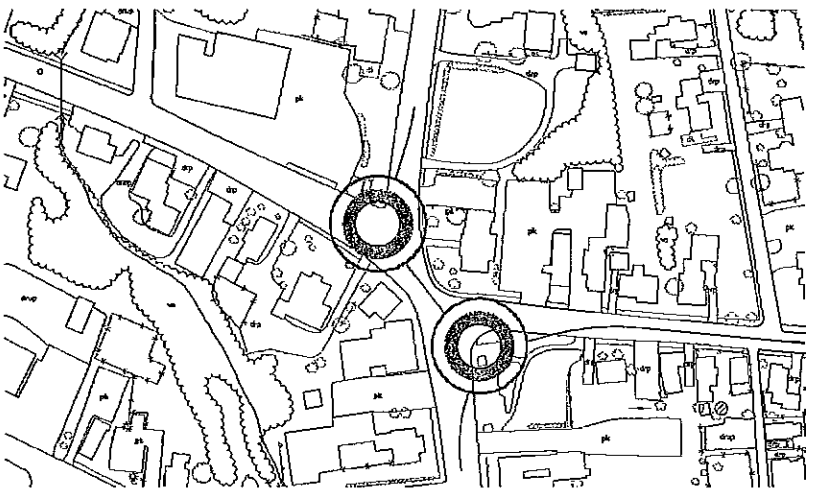
In terms of vehicle function, it would solve the High and Elm Street left-turn issues, and allow a continuous flow of through and local traffic. The Main Street splitter island would be short, as illustrated, and Main Street vehicles would be asked to yield to left-turners, so that North Mast and High Street traffic might turn left and travel east on Elm Street. At the same time Elm Street traffic would utilize the roundabout to proceed south on Main Street.

The Committee also discussed lengthening this splitter island so that one might not turn left onto Elm Street. This variation, however, would force these drivers to utilize Mill and Cottage Streets to get to Elm. This was viewed as unsatisfactory, as these streets were not designed for such traffic.

In terms of pedestrian safety and convenience, the traffic calming characteristics of a roundabout result in slower moving traffic, which is inherently safer. Additionally, the crosswalks would intersect the splitter islands, giving the pedestrian a place of refuge when half way across the street.

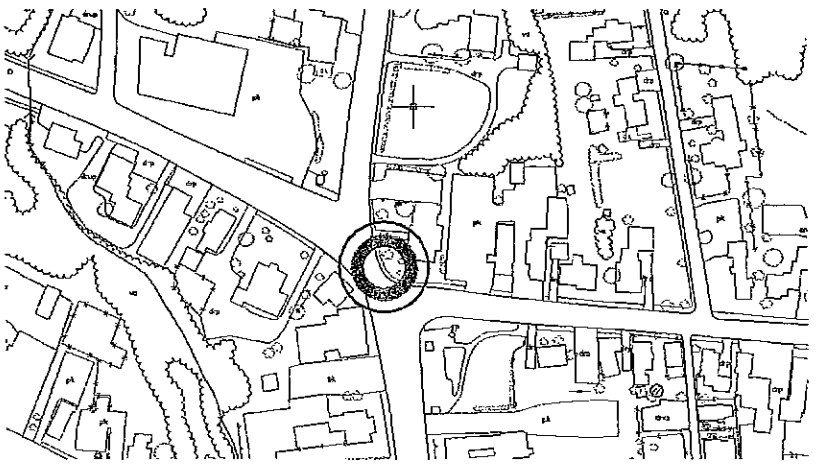
- Other Roundabout Intersection Alternatives

  Three other roundabout alternatives were considered. One was to consider two roundabouts, one at the High Street intersection as previously shown and a second one at the intersection of Elm and Main Street. This alternative was judged not to work because it was not possible to have sufficient distance between the two.



Double Roundabout or Single Elm/Main Streets Roundabout

The second alternative was to utilize only the southern roundabout, at the Elm and Main Street intersection. This roundabout has been located so that it does not require the purchase of buildings. Elm and Main Streets would need to be relocated to approach the roundabout at right angles, as illustrated by the red road center-lines. This alternative does therefore have a very significant impact on the Town Common, essentially causing its removal. It also impacts Main Street parking by eliminating it south to the Main Street Program offices. This alternative also has a technical issue in terms of traffic flow, requiring a very long splitter island, from the circle to High Street.

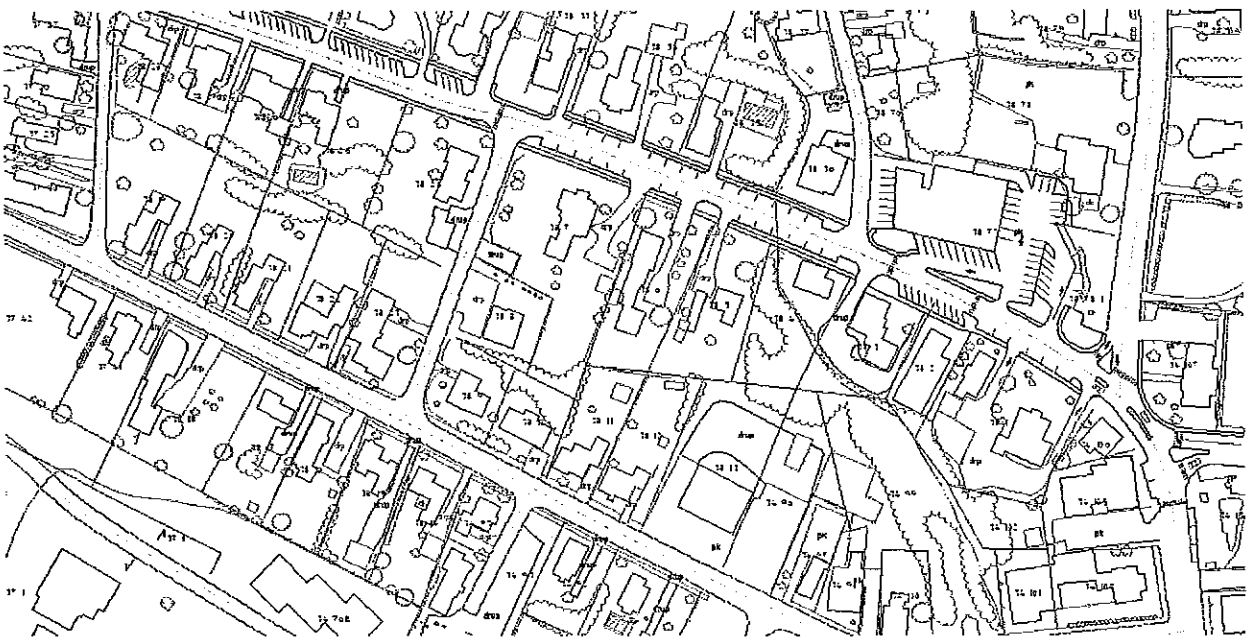


Centered Roundabout

The third alternative was to place the roundabout between Elm and High Streets. This alternative requires the purchase or removal of several buildings, including the library, and was, therefore, considered as unacceptable.

- The No Build/Traffic Calming Option

  This option is in response to the significant private property and public institution property taking impacts that would be caused by other solutions, both roundabout and signalization. The so called "no-build" option is to focus on pedestrian safety facilities as a traffic calming technique, and thereby create the desirable traffic breaks that would allow traffic entry and left turns from Elm and High Streets. More specifically, the travel way is narrowed resulting in greater traffic flow control, business entries are narrowed where they cause potential conflict, while retaining the maximum amount of on-street and off-street parking, and crosswalks are more numerous, slowing traffic, providing the traffic breaks needed to allow left-turn entry from side streets, while also providing greater pedestrian convenience. The following plan shows raised crosswalks and medians that are proposed to improve pedestrian safety in a way that provides traffic calming and supports local business and institutions. Additionally, as discussed earlier, this intersection should be provided with the opticom system to activate an emergency vehicle warning.



No Build / Traffic Calming Option

The following table summarizes these alternatives relative to various evaluation criteria. The several alternatives which are considered technically or physically non-workable are illustrated in grey. Of the viable alternatives, a roundabout at North Mast/High/Main Streets and the no-build option would appear to be equally preferred alternatives.

SUMMARY EVALUATION: Main/Elm/High/North Mast Intersection

	Provides for Vehicle Safety	Provides for Pedestrian Safety	Solves the Turning Issues	Convenient for Village Users	Less Impact on Public Properties	Less Impact on Private Property	Less Cost	Total Points
The 1970's By-Pass Option*	5	2	5	0	10	0	0	22
One-Way Loop System	5	2	5	0	10	5	10	37
1996 NHDOT Traffic Signal Intersection	10	10	10	0	0	0	0	30
4-Way Stop Intersection*	0	0	5	5	10	10	10	40
North Mast/Main/High Streets Roundabout	10	10	10	10	10	5	5	60
North Mast/Main/Elm Streets Roundabout	5	10	5	10	0	5	2	37
North Mast/Main/ High/Elm Streets Roundabout	10	10	10	10	0	0	0	40
Two Roundabouts*	0	10	0	0	0	0	0	10
No-Build/Traffic Calming Option	10	10	5	10	10	10	5	60

* Options judged as technically or physically unworkable.

While the roundabout and no-build options suggest a similar total point value, the latter has significantly less impact on private institutions and businesses. Private property is not negatively impacted, commercial access is less restrained and there is no need for the public taking of private property. While it is believed that this solution will operate satisfactorily, it cannot be guaranteed, and another solution may prove desirable over time. It is also true that when traffic volumes grow significantly, another solution or combination of solutions may be desirable. In either of these cases, the no-build/traffic calming option has less community risk in that it is an incremental decision and a future decision might reverse the Committee's recommendation with less cost or re-construction.

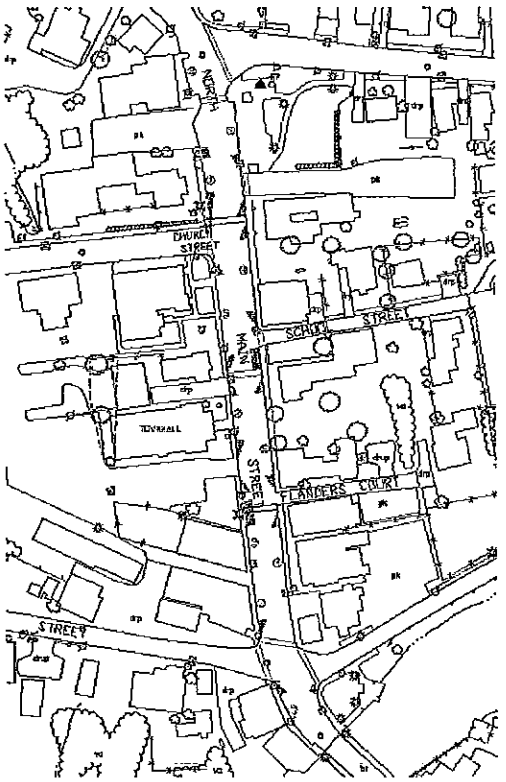
6. Main Street

Main Street is the primary business artery through the Village, and as such, is required to carry all commuting through traffic, as well as local business traffic. This must be achieved while not being detrimental to the Village's business district function, meaning that the preferred solution must maximize the number of available parking spaces. Secondly the design solution should utilize traffic calming techniques to slow traffic speeds, and thereby, provide for pedestrian safety and comfort. The solution

should, therefore, achieve this reconstruction of streets and sidewalks, and the rehabilitation of landscaping, including street trees, in a pedestrian friendly design.

- Existing Design

The existing design of Main Street does not achieve these objectives. The number of parking spaces is limited to approximately 20 spaces, after meeting the requirements of intersection sight distance. Secondly, the existing design does not utilize traffic calming techniques. The Police Chief noted how a driver perceives a straight shot for the street's length, and whose acceleration is controlled during commuting hours by the traffic back-up. While reconstruction of this design might be carried out in a more pedestrian friendly manner, additional curb bump-outs at pedestrian crosswalks and for landscaping would cost several parking spaces.



Existing Main Street Layout
(Showing Parking Availability)

- Center Median

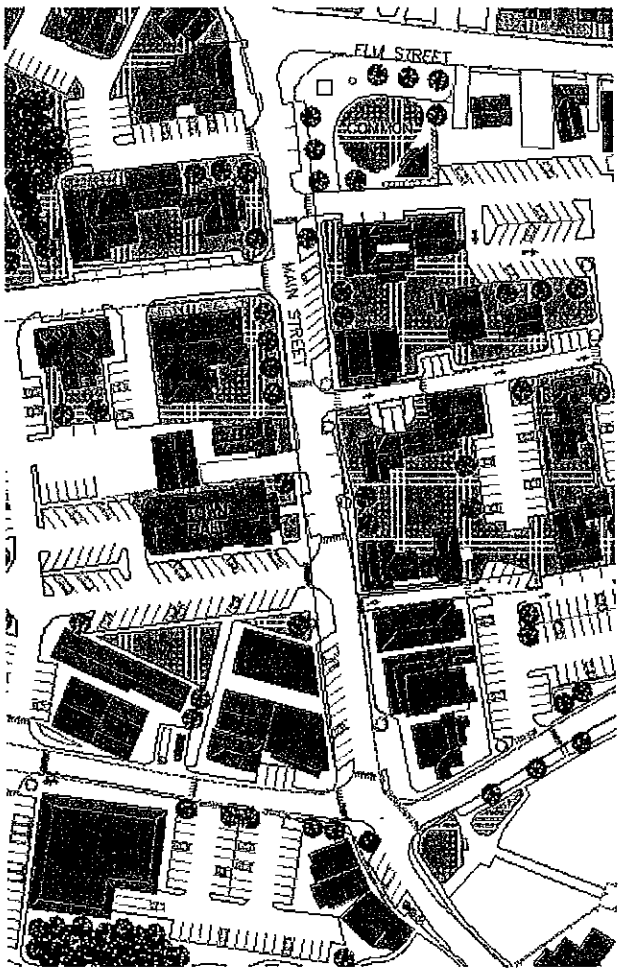
A center median design was also considered as one that could provide more traffic calming than the existing design. It would also provide for the maximum amount of landscaping, and would provide for a protected pedestrian refuge at crosswalks. The problem, however, would be a significant loss of on-street parking, which would be considered as its essential weakness. That is, while some design criteria are met, the reduction of parking is considered a fatal flaw.

- Planning Board Master Plan Proposal

The Planning Board's proposal best meets the community's design objectives, both those of the Planning Board and of the Main Street Program. First, on-street parking is maximized, with the development of approximately 32 on-street parking spaces. This number of spaces is an increase over the existing 30 spaces. The use of these spaces, as angled spaces, are considered to cause less of a restriction for commuting through traffic as they are entered and exited more quickly than parallel spaces. The potential problems of angled spaces with two or more through travel lanes are avoided.

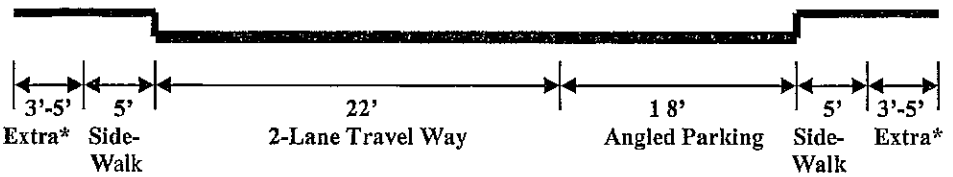
The basic traffic calming technique utilized is to avoid a straight street from the bridge to the Common, thereby encouraging a slower travel speed, even when the travel way is not crowded with commuting through traffic. This solution also allows a more equitable allocation of parking to both sides of Main Street, not giving preference to those businesses on one side of the street. Curb bump-outs, required for traffic control of this parking solution, provide natural locations for crosswalks and areas for landscaping.

The following sketch shows this solution, utilizing many of the details discussed by the Committee and evident in its meeting minutes.



Proposed Main Street Layout

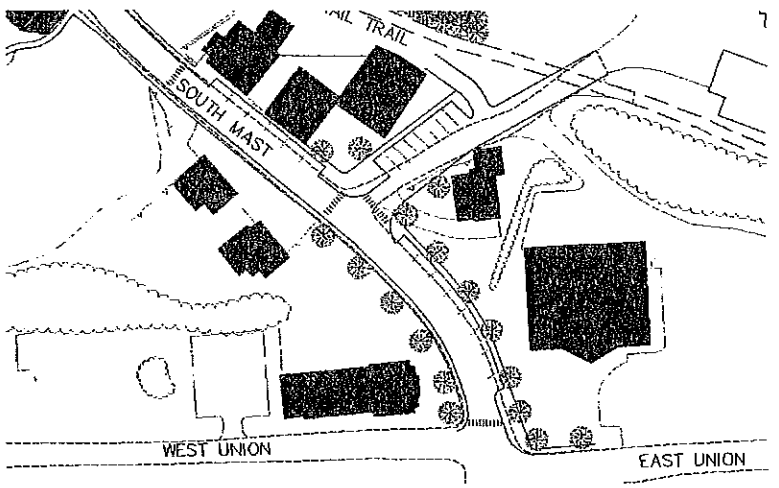
- Traffic Calming Cross-Section



NOTE: Alternate the availability of angled parking, by block.
*** Extra = Extra sidewalk width to be sought by easement from property owners so that public sidewalks might be 8' – 10' wide.**

The Main Street right-of-way is typically 50' wide. This is sufficient space for two-lanes with angled parking on one side, or parallel parking on both sides. The angled parking should be utilized where shown on the plan, with parallel parking as a transition, also where shown. It is desirable, however, to have wider sidewalks in a commercial core. This might be achieved with additional width by easement from property owners.

The Committee also recommends that the Main Street treatment continue on the south side of the Piscataquog River to the Pleasant/South Mast Street intersection. This configuration might be as in the following drawing.



It should be noted that, in this sketch, the Factory/Main Streets intersection has been relocated. One purpose of this is to allow better access for Factory Street properties, which are part of the village commercial center. The second reason is to improve sight distance from Factory Street, and the third reason to suggest this change is to improve the parking, loading and traffic flow requirements of the existing business at this intersection, and which sometimes conflict with Main Street.

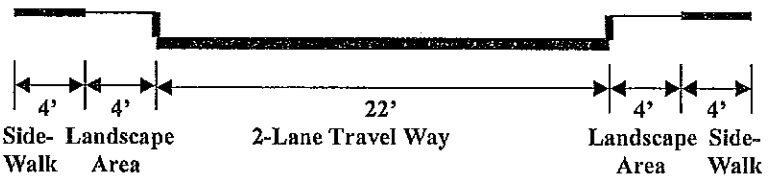
This change will allow for an equal number of parking spaces as currently exist. They will, however, be provided as a configuration that is more consistent with neighboring properties, that is easier for customers to use and is safer by directing traffic through one side road intersection, in lieu of a curb-cut.

This change also reflects the existing on-street parking pattern utilized by Saint Lawrence parishioners, but with bump-outs defining the parking and shortening the crosswalk length.

7. Church Street

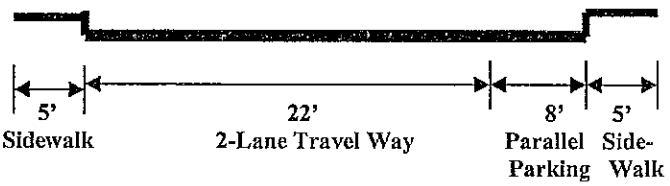
Church Street has only a 40' right-of-way, which limits some design opportunities. The existing design is now minus the curb and gutter, which should be added with reconstruction. Currently, without curbs, vehicles park on the landscaped area.

- Existing Design Cross-Section



Because of the desire to utilize traffic calming techniques, and the apparent need for some parking, even in the residential portion of this street, private property and bump-out areas within the right-of-way should be utilized for street trees. This design provides for the maximum amount of on-street parking.

- Traffic Calming Cross-Section



NOTE: Alternate the availability of parallel parking, by block.

8. Pleasant/South Mast Streets Intersection

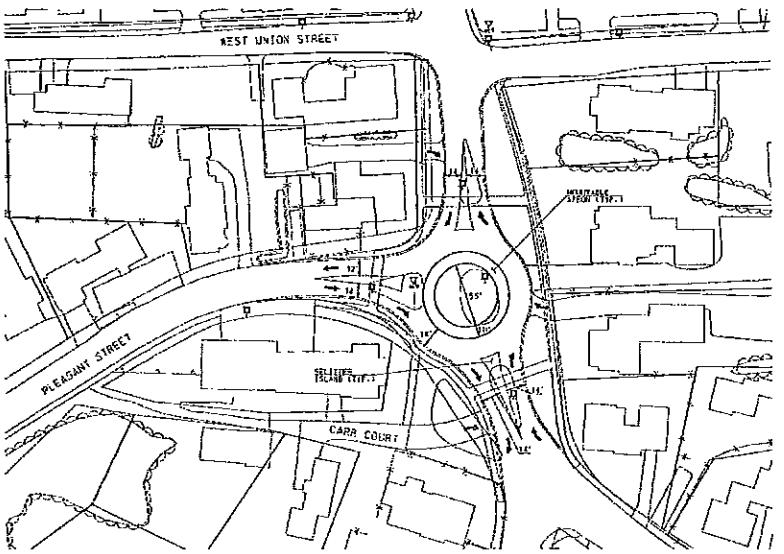
This intersection is one with right-of-way sufficient to construct the conceptually proposed McFarland-Johnson roundabout. Given the Committee's basic premises, that through commuter traffic should be directed through the Village, i.e. Route 114, and that traffic calming techniques should be utilized to slow traffic speeds, and thereby provide for pedestrian safety and comfort, this roundabout solution was deemed most acceptable. A traffic light solution, also possible, would not have allowed continuous, but slow speed, traffic flow in a manner which would also accommodate left turn and entering traffic to the greatest extent practicable.

Accident Data

Year	2005	2006	2007	2008	Total
Pleasant & Main Street	3	2	2	3	10

NOTE: Accident data does not include cause, type or severity of accident.

This solution should also include street trees and raised-table crosswalks as described elsewhere in this report. Mountain Road should retain its right and left turn exiting lanes, though the entry lane should be reduced in width by the curb's placement. Additionally, as discussed earlier, this intersection should be provided with the opticom system to activate an emergency vehicle warning.

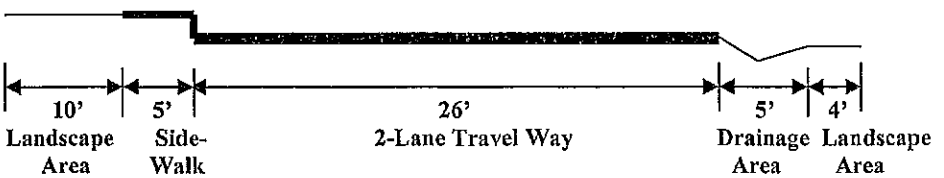


Pleasant/South Mast Streets Roundabout

9. South Mast Street

South Mast Street is also one of the major Village entries and will set the design tone of the Village. This entry should be designed as an esplanade, incorporating street trees on both sides of the road. The right-of-way, less wide than North Mast Street, is 50' wide and the existing structures are reasonably setback.

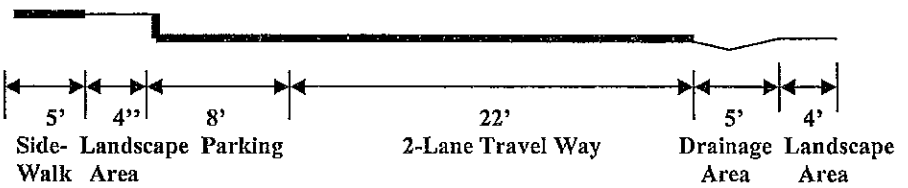
- Existing Design Cross-Section



The travel way appears generally to be off-center for most of its distance. The existing design is now minus the curb and gutter on its south side, which would be desirable to correct. Cost constraints, however, suggest that this option may not be possible, as sidewalk construction would require an enclosed drainage system. The 50-foot right-of-way width, however, is wide enough for a 2-lane road with parking and a sidewalk on one side, and landscaping on both sides, the total being narrow enough to achieve an esplanade feel with the planting of shade trees.

Since on-street parking is less critical in this section, it is important to protect the pedestrian by a landscaped area between the sidewalk and the road, in lieu of parking lanes on both sides. In addition, this section of road, while being a fairly straight stretch all the way to Wallace Road, is still in an urbanized area and should be governed by the same design principals that have previously been put forward and recommended.

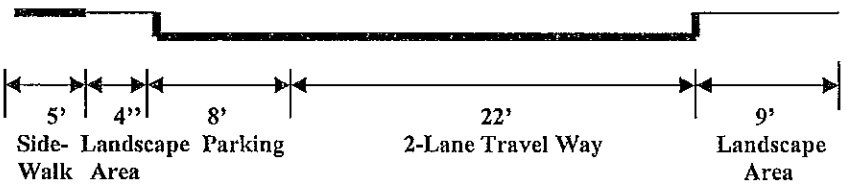
- Traffic Calming Cross-Section – with open drainage



South Mast Street would, therefore, be landscaped in the same manner as Main Street. Crosswalks at Prospect Street, Pineridge Street and Barnard Lane should also be constructed in the same manner as on Main Street, including the bump-out. South Mast Street, however, would not include street furniture.

If, however, drainage assessment revealed that South Mast Street should have curbs on both sides, with the requisite enclosed storm drain system, then the following cross-section should be utilized.

- Traffic Calming Cross-Section – with closed drainage



NOTE: Alternate the availability of parallel parking, by block.

Because of the location and character of this street, it is perceived as being suitable for faster travel speeds. In response to this situation, the Committee noted that painting the center and fog lines, visually creating a narrower travel way, slowed traffic speeds, even when the roadway itself was not narrowed. Such treatment should, therefore, be considered on South Mast.

There are also two unique minor intersections along South Mast Road for which the Committee would recommend:

1. West Union Street should be realigned at Barnard Lane to improve its sight distance and to make a safer intersection. Currently, commercial traffic generated on West Union Street avoids this exit because of site distance. With this alteration and the other traffic calming measures in the area, however, this intersection would become usable for any existing or new development which depends on East Union Street.

10. Wallace Road/South Mast Street Intersection

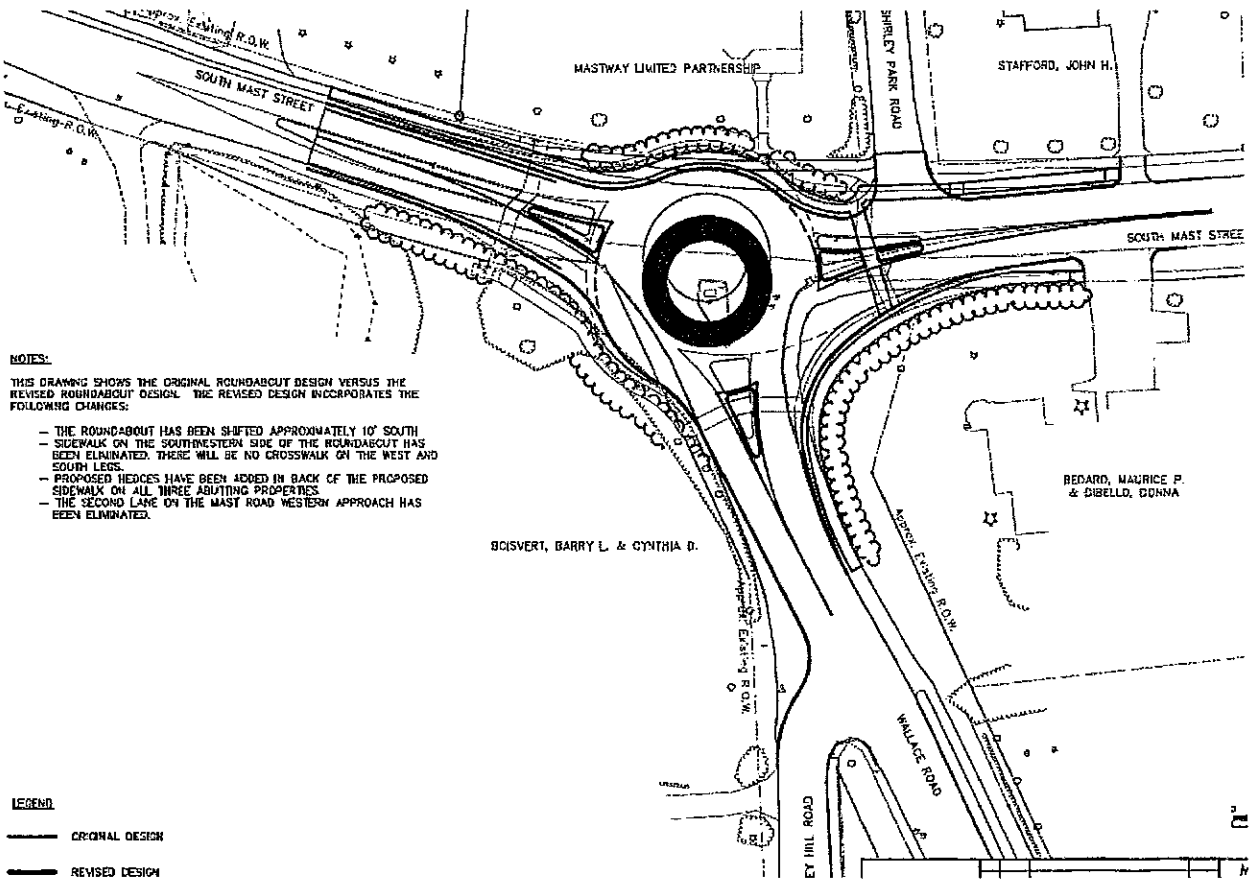
For all the same design reasons, the Wallace Road/South Mast Street Intersection should be as conceptually proposed by McFarland-Johnson, but as modified through resident meetings. These modifications removed a Mast Road to Wallace right-turn by-pass lane, which had severely impacted an abutter's property, and would have defeated the inherent traffic calming characteristics of a roundabout.

Accident Data

Year	2005	2006	2007	2008	Total
South Mast Street & Wallace Road	13	10	12	8	43

NOTE: Accident data does not include cause, type or severity of accident.

The number and location of crosswalks was also changed to meet the anticipated student travel pattern in the safest manner. Additionally, as discussed earlier, this intersection should be provided with the opticom system to activate an emergency vehicle warning.



Wallace Road/South Mast Street Intersection
(Recommended Variation Shown in Blue)

11. **Design Details**

The subject of design details is separated from the earlier road design discussion, as these details should be the same for any road section in which they are utilized. For example, crosswalks are located in all the road sections and should be similarly designed and constructed, thereby providing a unified design and traffic calming affects at all locations.

More specifically, design consideration should be given to raised-panel crosswalks of a smooth material for safe walking, bordered by a rough material, like cobblestone, and pedestrian activated LED driver warnings to alert drivers. This design, as a raised-table, is also traffic calming in character. It is important, however, that the height of a raised-table crosswalk be slight, and not have a speed-bump character, which might damage emergency vehicles.

Raised Panel Crosswalk with Smooth Walking Surface and Alerting Rumble Strips

Sidewalk materials may be different for different portions of this corridor. The one standard, which has been established, is for the Main Street area. Here the sidewalk is to be concrete with a brick edging.

Landscaping should include groups of trees from the following list of salt and pollution tolerant trees, with shade trees being utilized, except under overhead utility lines where shorter decorative trees should be utilized. The specific placement of trees should be coordinated with the Main Street Program and its festival needs.

Shade Trees	Decorative Trees
1. Thornless Honey Locust	**1. Littleleaf Linden**
2. Red Maple	**2. Bradford Pear**
3. Summit Ash	
4. Zelkova	

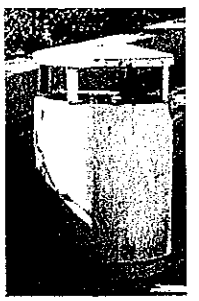
Not detailed on this plan, but recommended, are pedestrian height and style street lighting along all sidewalks, and higher street lighting, as required, at intersections. Pedestrian light fixtures should be full cut-off fixtures and be similar in appearance to the below light in Rotary Park and as utilized in the new

hardware store on Depot Street. There should also be consideration for low power usage fixtures and appropriate light timing controls.

Pedestrian Scaled Light

Street furniture is applicable only to the Main Street Section. Here, street furniture should include a short bench, too short for sleeping, but long enough for two persons. Appropriate trash containers should also be included.

Short Benches



Trash Container

Overhead utility lines were also discussed. The consensus was that the cost of underground wiring was exorbitant, e.g. in the neighborhood of a million dollars, and therefore unreasonable to propose. The relocation of wiring, however, is recommended. This will result in the utilities cleaning-up their delivery systems, and without poles, will make Main Street more flexibly in design and in its use. It will also make for the appropriate Main Street image for all of Goffstown.

12. On-Going Maintenance

It is also acknowledged that on-going maintenance must be part of this plan. While volunteers have been the mainstay of previous efforts, it is suggested that this will not be sufficient in the long run. A combination of town forces and the Main Street Program should be considered, as well as potential joint property/business owner financial participation.

One manner to achieve this objective would be to utilize RSA 31-120, Central Business Service Districts. This mechanism, once authorized, allows the creation of a tax district for the provision of services to a greater extent than currently provided. It provides for an annual budget through the regular budgeting process, an assessment based on benefits received, contracting for those services, and annual reporting. Typically, the municipality participates as a property owner within the district to the same extent as other property owners.

13. Budgeting and Schedule

The current Capital Improvement Program, as approved by Planning Board, combined with elements from DPW road reclamation plan, includes the following planned funding relative to these improvements:

Project	2009	2010	2011	2012	2013	Memo
Reconstruct North Mast St.				$665,581		Reclaim Budget
North Mast/High/Main /Elm St. Intersection						$0
Reconstruct Main St.			$234,000	$572,000	$674,000	CIP
					$787,402	Reclaim Budget
Reconstruct Church St.	$626,096					Reclaim Budget
			$85,000			CIP (Streetscape)
Reconstruct Pleasant St.		$419,766				Reclaim Budget
Reconstruct New Boston Rd.		$953,874				Reclaim Budget
Reconstruct South Mast St.		$602,167				Reclaim Budget
Reconstruct Wallace Rd. and Pleasant St. Intersections		$710,000				CIP (Includes South Mast St. Streetscape)
	$626,096	$2,685,807	$319,000	$1,237,581	$1,461,402	

The budgeting of these funds, or any combination thereof, however, will be determined by the Board of Selectmen, the Budget Committee and Town Meeting.

Construction of this large amount of work is potentially very disruptive to both businesses and the citizens of Goffstown. Techniques should be incorporated into construction planning and throughout the construction process to minimize these impacts. Some ideas that might assist in this objective are:

1. Plan work in concert with other underground utilities.
2. Keep one half of the roads open as much as possible, minimizing the use of detours.
3. Consider a construction bid that rewards the contractor for every day under a construction time limit, not just a penalty for delay.
4. Consider night construction requirements.
5. Consider utilizing Goffstown Main Street Program as the outreach vehicle to business owners along the entire work area.
6. Utilize, as DPW always does, weekly update/information sessions, as well as the town's web site during the construction process.

14. Other Roads

The Planning Board's proposed plan indicates two new roads and the interconnection of parking lots. The Committee discussed these proposals. The first was an extension of Depot Street to Church Street

and a new road beginning at North Mast and Summer Streets, connecting to Church Street. It was the Committee's consensus that these improvements were not required at the present time, but reflected a potential long-term need, following full development of the Village. The second, interconnection of parking lots, while not part of the road plan, took a higher priority than the road extensions. These should be encouraged to create alternative vehicle and pedestrian paths, and to encourage shared, non-designated parking.

The Committee also discussed concerns about the safety of Park Lane and its intersection with South Mast Street. It was recommended that this street be a right-turn-only onto South Mast Street, and that the State be requested to relocate its 40 mph zone further to the east, slowing traffic as it approaches this intersection.

Attachments:

- FHWA, Traffic Calming State of the Practice, ITE/FHWA, August 1999: Chapter 7: Emergency Response Concerns, pp 141-149.

- Schreiber/Anderson Associates, Village of Maple Bluff Comprehensive Plan 2025, November 2002 Draft: Appendix D: Traffic Calming .

- New Mexico DOT, Driving Roundabouts, undated.

- Committee Minutes

Appendix D

TRAFFIC CALMING

TRAFFIC CALMING

Introduction

Many of Maple Bluff residents have identified transportation issues as the most important element that the Village needs to address. Residents have voiced their concerns about dangerous intersections, the need to slow down traffic, reduce or eliminate cut-through traffic, and improve pedestrian and bicycle safety and mobility throughout the community. At community meetings and workshops, residents have specifically called for traffic calming measures to be considered to achieve these goals. This Appendix includes an excerpt from the book *Emergency Response: Traffic Calming and Traditional Neighborhood Streets, by* Dan Burden, Walkable Communities with Paul Zykofsky, Local Government Commission, Center for Livable Communities.

PART ONE: FACTS AND MYTHS

Fact or Myth #1

Faced with traffic calming measures, motorists will become more aggressive.

This statement is false. Most motorists behave aggressively on primary streets and highways where they are stuck in traffic or delayed for many minutes at busy intersections. Traditional and traffic calmed streets are designed to allow for a steady - albeit slower - flow of traffic. As a result, stress can be reduced in these tamer environments.

Fact or Myth #2

Traffic calming reduces response time.

Half-true. Poorly planned traffic calming can impact response times. Well planned traffic calming programs should not.

Fact or Myth #3

Traffic calming devices damage fire equipment.

This statement may be true. Case studies in Portland and other cities suggest repeated exposure to vertical traffic calming tools such as speed bumps and speed tables may accelerate stress fractures of ladders, cabinets and other equipment and accessories.

Fact or Myth #4

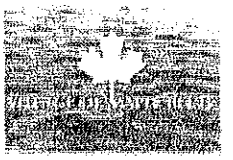
Roundabouts and circles can delay emergency response times by up to 30 seconds.

This is largely untrue. Traffic circles are very large and can cause delays. However, large circles are not considered to be traffic calming devices. Most roundabouts, which are much smaller than circles, tend to speed up rather than delay emergency responders.

Fact or Myth #5

Traffic calming and narrow streets hinder site operations.

Largely untrue. Properly designed streets in new traditional developments include curb extensions at, or near, hydrant locations, thus prohibiting parking and assuring a full 20 foot space for operations.



Fact or Myth #6
Traffic calming restricts access to streets.
False. Properly designed traffic calming measures include curb extensions, mountable medians and neckdowns designed with turning radii assuring adequate access to streets.

Fact or Myth #7
Traffic calming should not be used on emergency response routes, collector roads or arterials.
Partly true. Most traffic calming tools, such as chicanes, diverters, humps and tables should not be placed on major routes. However, all visual tools which help slow speeders, such as gateways, medians, landscaping, pigmented bike lanes and similar devices have no negative effect on emergency response.

Fact or Myth #8
Traffic calming has no net safety benefit.
Not true. With good community and traffic calming planning, delays to households can be minimized.

Fact or Myth #9
Street closures greatly impact emergency access and response time.
True. Traffic calming practitioners are cautioned to stay away from street closures and other measures that reduce access.

Fact or Myth #10
Fire fighters have been injured or killed when hitting traffic calming measures.
Sadly true. Speed humps hit by a fire truck at high speed can cause personal injuries, and a standing or unbelted firefighter can be tossed from a vehicle.

Fact or Myth #11
Traffic calming tools create added pollution, noise and risk.
Properly planned and placed traffic calming features have no negative effect on the environment. Most studies show that appropriate traffic calming tools produce steady, proper travel speeds through neighborhoods.

PART TWO: TRAFFIC CALMING

So what is traffic calming, and how extensive are the treatments?

Traffic calming consists of a set of mostly physical treatments, or changes to roadways, that help manage the flow of traffic while requiring motorists to behave in a civil manner around shopping districts, schools and neighborhoods. Traffic speed, noise and volume are often reduced and a more even distribution of traffic, often results from these efforts.

1. Stop Signs
Stop signs are not traffic calming tools.
When communities lack a well thought out traffic calming program, residents often ask for unwarranted traffic control devices, such as stop signs, to be installed at inappropriate locations.

Average Delay: 6-11 seconds.

Comments:
1. Implement alternative traffic calming solutions.
2. Use curb extensions which remove some, or most of the screening at intersections and assist in response speed.
3. Consider mini-roundabouts, a superior intersection tool for many settings, that can reduce delays by 3-6 seconds.

2. Speed Humps

Speed Humps are often overused.

When communities lack a good traffic calming program, residents often ask for speed humps. However, humps in one location tend to shift the problem to parallel streets, thus requiring more humps. Speed humps can also be noisy.

Average Delay: 6-11 seconds.

Comments:
1. Implement alternative traffic calming solutions.
2. Consider using speed tables instead. All horizontal deflection tools and visual tools are preferred to vertical alternatives. Speed pillows are also good alternatives.
3. On long blocks, short medians, one lane slow points, tree wells, and similar chicane effects are superior and more attractive.
4. Work with traffic engineers to allow sufficient horizontal deflection for these alternatives. If on-street parking is needed to keep appropriate deflections, do not insist that parking be removed.

3. Speed Tables

Speed Tables assist street crossings.

Compared with speed humps, speed tables provide less of an impediment to emergency equipment while providing communities added value.

Average Delay: 2-9 seconds.

Comments:
1. Use alternative traffic calming solutions, especially medians with curb extensions that narrow travel lanes to ten feet.
2. Limit speed tables to the most vital locations, such as around schools, parks, senior centers and low speed commercial streets.
3. Use strong visual techniques such as Seminole Hump markings to enhance slowing, and keep vertical rise to a minimum.
4. Use markings in conjunction with imbedded roadway lights that flash when pedestrians are present as alternative to speed tables.

4. Raised Intersections

Raised intersections serve as gateways.

Raised intersections are superior to 4-way stop controls, which significantly slow responders. Raised intersections are most popular in downtowns, college campuses and other special locations.

Average Delay: 2-8 seconds.

Comments:

1. Use alternative traffic calming solutions, especially mini-roundabouts, roundabouts and modified intersections.
2. Consider that intersection humps are the most expensive vertical deflection tool. They are most often used as gateways into downtowns or prominent neighborhoods.
3. Use improved, standard at-grade intersection geometrics, and provide added safety with median noses to slow left turning motorists. Also use "pork chop" islands to separate conflicts with turning vehicles.
4. Use colorful paver stones or other visual effects to slow motorists.

5. Speed Pillows

Speed pillows are attractive solutions.

Speed pillows are designed to force motorists around both sides of 3-4 inch raised islands.

Average Delay: 1-4 seconds.

Comments:

1. These treatments are strongly preferred by responders over the delays and vertical jolt of bumps.
2. Should be designed so that they are easily detected.
3. It is helpful to add curb extensions to create a narrowed ten foot opening and to provide space for landscaping. With such additional aids, it becomes easy to detect and steer vehicles into the center of the roadway. Experienced large vehicle operators can easily straddle the pillow.

6. Chicanes

Chicanes are a series of islands.

Chicanes offer designers many choices for creating horizontal deflection. Chicanes can be any collection of islands forcing motorists to divert their path.

Average Delay: 1-4 seconds.

Comments:

1. These treatments are strongly preferred by responders over the delays and vertical jolt of humps.
2. Should be designed so that they are easily detected.
3. Design chicanes that create 20-foot wide openings to responders have space, away from parking, to set up for fire or medical response. It is appropriate to plan these measures in newer or rebuilt streets so that fire hydrants are placed in the same location.

7. Curb Extensions

Curb extensions aid many intersections.

Curb extensions are a fire responder's best friend when it comes to operation locations.

Average delay: Varies widely.

Comments:
1. Use curb extensions where motorists routinely park too close to intersections.
2. Curb extensions remove some or much of the screening at intersections and assist in response speed.
3. Mini-roundabouts or roundabouts are other intersection tools for many settings. They keep delays to moderate levels.
4. Higher volume side street locations require additional assurance that larger vehicles do not have to cross over the center line to make their entries.
5. Right-hand turns are the most critical. If neckdowns are used, place curb extensions on the right side of the street to be entered.
6. Curb extensions provide good places to install fire hydrants away from parked cars and in easily identified locations.

8. Curb Radius Reductions

Many entries are too fast.
Many towns have not used sufficient care on street entries. This oversight creates high speed entries into neighborhoods and endangers pedestrians trying to move along collector or arterial streets.

Average Delay: Varies widely.

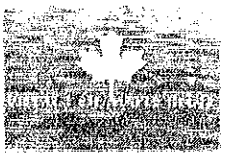
Comments:
1. Use curb radius reductions where motorists routinely park too close to intersections.
2. Curb extensions remove some, or most of the screening at intersections and assist in response speed.
3. Mini-roundabouts, or roundabouts, are other intersection tools for many settings. The keep delays to moderate levels.
4. Right-hand turns are the most critical. Work with traffic engineers to make sure that your largest vehicles can still access neighborhoods. This may require crossing over the center line of the street you are departing.

9. Gateways

Gateways slow entry speeds.
Well designed gateways can reduce speeds by narrowing lanes to ten feet and visually tightening the space of entry.

Average Delay: Varies widely.

Comments:
1. Use gateways where motorists routinely park too close to intersections.
2. Gateways should be designed to minimize visual screening, thus assisting in response speed.



3. Gateway medians are designed to reduce entry and exit speeds to make streets less attractive to through traffic.
4. Right-hand turns are the most critical. Work with traffic engineers to make sure that your largest vehicles can access neighborhoods. This may require crossing over the center line of the street you are departing.

10. Mini-Roundabouts

Mini-Roundabouts (Mini-circles).
Mini-roundabouts provide excellent counter-measures to the proliferation of stop signs.

Average Delay: Varies widely.

Comments:
1. Where motorists routinely park too close to an intersection roundabouts may require additional measures.
2. Right-hand and left-hand turns are largely unaffected. Use curb extensions to prevent parking too close to the intersection.
3. Left-hand turns can be made across the front face of mini-roundabouts. Note that the white concrete splitter island is mountable. Smaller mini-roundabouts do not use these islands, making entries even easier.

11. Roundabouts

Roundabouts are powerful and safe.
Roundabouts are the most effective (and sometimes controversial) new tools for intersections. Roundabouts are proving to be safer, more efficient tools for moving traffic through intersections with minimal delays.

Average Delay: Varies widely.

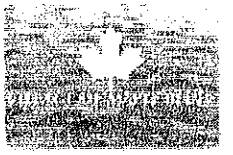
Comments:
1. Roundabouts eliminate the possibility of motorists parking too close to intersections.
2. Roundabouts may be inappropriate in areas where traffic backs up from other signalized intersections Consider other intersection designs for these locations.
3. Most roundabouts are designed with truck aprons to rear wheels of large trucks can be accommodated.

12. Medians, Landscaping

Medians and Landscaping
Medians and landscaping features are attractive and functional traffic calming tools. Medians slow traffic on curves, prevent unsafe access to streets from commercial and residential driveways, and provide refuge for pedestrians.

Average Delay: Minimal or None

Comments:
1. Include bike lanes when medians are longer than 500 feet.
2. Speed tables can be added around schools, parks and other pedestrian destinations.



3. On long blocks, short medians, one lane slow points, tree wells, and similar chicane effects may work better than medians and can be just as attractive.
4. Work with traffic

13. Street Closures

Street closures should be avoided.

When communities lack a traffic calming program or knowledge of other choices, residents often ask for street closures to have the benefits of a cul-de-sac style street.

Average Delay: 60-240 seconds.

Comments:

1. Use alternative traffic calming solutions.
2. Virtually all other tools are preferred.
3. Use partial closures instead.
4. When essential to use a full closure, insist that pedestrian, bicycle and emergency access be retained.
5. Breakaway bollards and other landscaping materials can be used to prevent motorist entry while allowing emergency access.

14. Diverters

Diverters rechannel traffic.

Equal and fair distribution of traffic sometimes calls for treatments forcing motorists back to the principal roadway.

Average Delay: 6-120 seconds.

Comments:

1. Fix the principal road to lower cut-through traffic.
2. Use alternative traffic calming solutions.
3. Most other tools are preferred.
4. Use partial closures and neckdowns instead.
5. When essential to use a diverter, insist that pedestrian, bicycle and emergency access be retained.
6. Breakaway bollards and other landscaping materials can be used to prevent motorist entry while allowing emergency access.

CHAPTER 7

Emergency Response and Other Agency Concerns

In 1997, the National Fire Protection Association published an article on traffic calming with an attention-getting title: "Things That Go Bump in the Night."[1] While balanced in its treatment of the subject and moderate in its tone, the article was a wake-up call to the fire chiefs of America. The message was that their vital interests are threatened by traffic calming initiatives.

Without question, a major obstacle to traffic calming in the United States is opposition from fire-rescue services. Traffic calming measures that are effective in slowing or diverting automobiles will have the same effect, or sometimes even greater effect on fire-rescue vehicles. The biggest challenge is to keep the effect on emergency response times within acceptable bounds or to find new ways of slowing and diverting other traffic without substantially impeding emergency response. As reported by the Portland, OR, Bureau of Traffic Management, this challenge will require "public policies, traffic calming practices, and emergency response strategies that strike a balance between the desire for slower and safer traffic conditions and the desire for prompt emergency response."[2]

Varying Experiences

From a national survey conducted by traffic calming staff of Berkeley, CA, four out of five cities report "some concern" on the part of emergency services over the use of speed humps.[3] Fortunately for traffic managers wishing to implement traffic calming measures, it is a long way from "some concern" about speed humps to active opposition to all traffic calming measures.

Table 7.1 summarizes the positions taken by fire-rescue and police departments of the communities featured in this report. Police are generally supportive; fire and emergency medical staff are not. In a few places, fire officials have hardly reacted at all. In others, such as Sarasota, FL, and Seattle, WA, fire officials opposed traffic calming measures initially but after some experience took a neutral position. Finally, there are many cases of outright opposition.

Conflict and Resolution—Portland Case Study

In six communities—Boulder, CO; Berkeley; Eugene, OR; Montgomery County, MD; Portland; and San Diego, CA—reactions of fire officials have been strong enough to precipitate moratoria on the installation of speed humps, traffic circles, and other speed control measures. In most cases, concern turned to opposition when one or both of the following conditions were met:

- Measures were installed at such a rapid rate that all local streets would soon be treated.
- Measures once limited to local streets were extended to higher order streets that served as primary emergency response routes.

Until 1995, Portland's Bureau of Traffic Management worked well with its fire bureau on the design and installation of traffic calming measures. There was frequent consultation and sensitivity to the fire bureau's 4-minute response time goal. Measures were chosen with fire-rescue vehicles in mind, as when Portland tested 12-foot, 14-foot, and 22-foot humps with fire trucks and police cars, and decided against the standard 12-foot hump based on the results.

Yet by 1995, both prerequisites for opposition to traffic calming were met. Portland's big-budget program was calming local streets at a rate of about 20 per year. Emergency services were seeing new humps everywhere and becoming concerned. Plus, starting in 1992, Portland had begun calming higher order streets under its collector recovery program, the first of its kind in the United States. The fact that only 22-foot tables, center islands, and curb extensions were placed on such streets was small consolation for the fire bureau (see figure 7.1).

In early 1996, the city council, at the fire bureau's request, imposed a partial moratorium on new speed humps and traffic circles until a new classification system of emergency routes could be devised. The resulting "response grid" took 2 years to negotiate and was only recently approved by the city council (see figure 7.2).

Table 7.1. Emergency Service Department Positions on Traffic Calming.

Community	Fire and Emergency Medical Service Departments	Police Department
Austin, TX	Escalated its opposition to traffic calming—agreed to 2 years of new hump installations	In favor of humps—receptive to other measures as yet untested
Bellevue, WA	Negotiating new emergency routes with limitations on measures permitted on each route —oppose use of humps and circles on slopes where emergency vehicles have trouble accelerating	Supportive generally—humps and other self-enforcing measures reduce manpower needs
Berkeley, CA	Forced moratorium on humps until program could be fully evaluated—evaluation ongoing—oppose diverters to lesser extent than humps	No stated position or neutral
Boulder, CO	Forced virtual moratorium on physical measures—opposed to humps, circles, and "anything else that is effective"—experimenting instead with emergency-response-neutral measures	No stated position or neutral
Charlotte, NC	Concerned about humps on collectors—fire chief publicly neutral despite opposition from firefighters	No stated position or neutral
Dayton, OH	Publicly neutral due to a supportive city administration—prefer circles to humps	Supportive generally—instrumental in street closures to fight crime
Eugene, OR	Opposed to speed humps—favored midblock deflector island over chicane on street next to fire station, and then insisted on design that rendered measure ineffective	No stated position or neutral
Ft. Lauderdale, FL	Opposed to humps—opposition expressed in survey letter at time of neighborhood vote on measures	In favor of humps to discourage speeding—in favor of street closures to fight crime
Gainesville, FL	Opposed to any measure that slows response—mollified if measures are kept off collectors and arterials	In favor of access restrictions to fight crime—opposed to measures such as semi-diverters that require police enforcement
Gwinnett County, GA	Publicly neutral toward 22-foot tables	In favor of tables to discourage speeding
Howard County, MD	Neutral as long as kept off primary response routes—lack of opposition to traffic calming may be related to use of 22-foot tables on residential collectors	In favor of humps and other self-enforcing measures to discourage speeding
Montgomery County, MD	Opposed to vertical measures, particularly standard 12-foot humps	In favor of humps

Table 7.1. Emergency Service Department Positions on Traffic Calming (continued).

Community	Fire and Emergency Medical Service Departments	Police Department
Phoenix, AZ	Opposed to humps and diagonal diverters—neutral toward partial closures—cannot stop hump installations under neighborhood-initiated process	Against any measure that increases workload, particularly turn restrictions
Portland, OR	Previously opposed to humps and anything else that slowed response—neutral now that emergency response grid has been negotiated	In favor of circles as "DUI (driving under the influence) catchers"
San Diego, CA	Opposed to any physical measure on emergency response routes	Neutral
San Jose, CA	Neutral	No stated position or neutral
Sarasota, FL	Initially opposed to humps on collectors—supportive since completed emergency response study	Initially opposed to humps but now in favor of them—still opposed to one-lane chokers, which are due to be removed
Seattle, WA	Initially concerned about diagonal diverters and closures—neutral since these have been supplanted by other measures	No stated position or neutral
Tallahassee, FL	Neutral	In favor of humps to discourage speeding
West Palm Beach, FL	Neutral-to-supportive due to safety benefits of traffic calming	In favor of more measures to discourage speeding and more closures to fight crime—latter now precluded by city policy

Figure 7.1. Traffic-Calmed Collector. (Portland, OR)

Nearly all problem local streets are once again eligible for the full array of traffic calming measures (see table 7.2). In theory, most residential collectors are also eligible again, though the fate of the Neighborhood Collector Program is uncertain. At least for the next 2 years, the city council has provided no funding for traffic calming measures because of a budget shortfall.

Emergency Response Times

Even though the public purposes pursued by traffic and fire officials are all legitimate, the debate between proponents of traffic calming and providers of emergency services can be intense. At the height of discord in one fea-

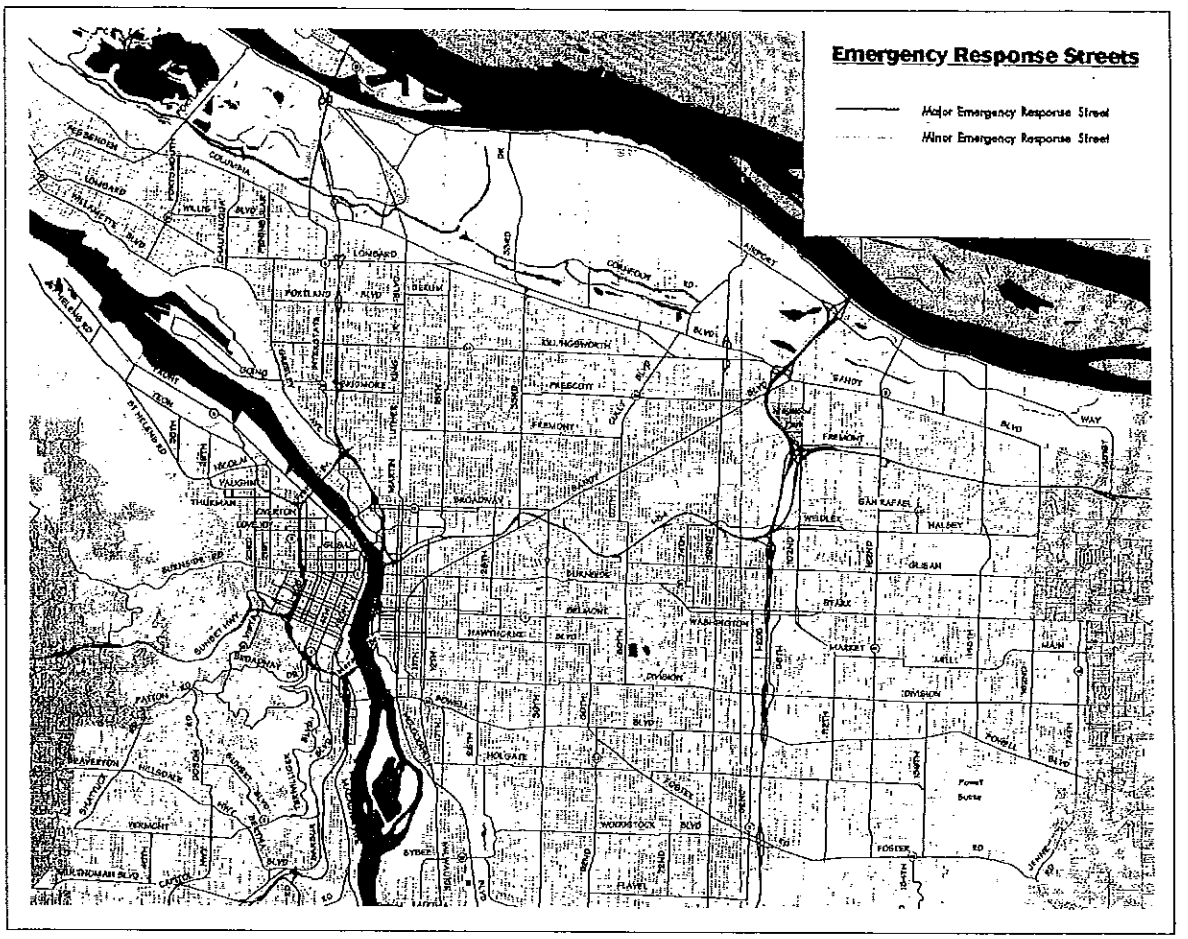


Figure 7.2. Portland's New "Response Grid."

Source: City of Portland, "Emergency Response Classification Study—Report and Recommendations," April 1998.

Table 7.2. Eligibility for Traffic Calming. (Portland, OR)

Street Type	Ineligible	Eligible
Problem local street segments	5	775
Problem collector segments	100	300

Source: Bureau of Traffic Management, City of Portland.

tured community, the fire chief suggested, "One minute is a long time to wait when you're not breathing."

The fire chief was correct in one respect. He focused on the key issue in emergency response, time delay. This section presents the best available information on time delay associated with different measures in different applications.

Emergency Response Tests

Several localities have performed controlled tests of speed humps, speed tables, and traffic circles to see how much delay is produced by them. Multiple runs are made with multiple vehicles driven by multiple drivers to estimate average travel times with traffic calming measures in place. These are then compared with travel times on untreated streets to obtain delay estimates. A sample test course is shown in figure 7.3.

Results of several studies are reported in table 7.3. Some tentative conclusions follow:

- Regardless of the traffic calming measure or fire-rescue vehicle, the delay per slow point is nearly always under 10 seconds. That can add up when slow points are strung along an emergency response route. Still, it is less than the 30-second delay per hump suggested by critics.[1]

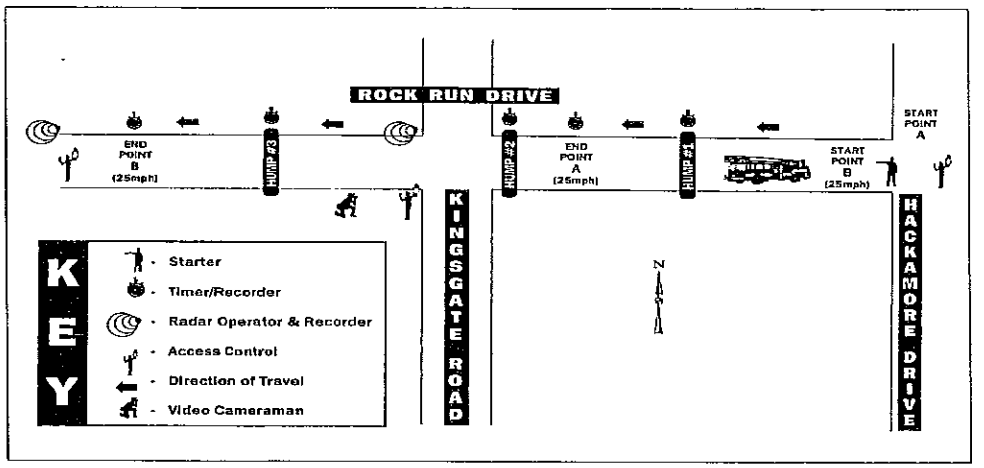


Figure 7.3. Speed Hump Test Course. (Montgomery County, MD)

Source: Fire and Rescue Commission, "The Effects of Speed Humps and Traffic Circles on Responding Fire-Rescue Apparatus in Montgomery County, Maryland," August 1997, Appendix F-1.

Table 7.3. Emergency Response Time Study Results.

Community	Measure	Delay at Slow Point (seconds)
Austin, TX	12-foot speed humps	2.8 (fire engine) 3.0 (ladder truck) 2.3 (ambulance without patient) 9.7 (ambulance with patient)
Berkeley, CA	12-foot speed humps	10.7 (fire engine) 9.2 (ladder truck)
	22-foot speed tables	3.0 (fire engine) 13.5 (ladder truck)
Boulder, CO	8-foot speed hump	4.7 (fire engine)
	12-foot speed hump	2.8 (fire engine)
	37-foot speed table (6-inch rise)	3.8 (fire engine)
	40-foot speed table (6-inch rise)	3.8 (fire engine)
	25-foot-diameter traffic circle	7.5 (fire engine)
Montgomery County, MD	12-foot speed humps	2.8 (ladder truck) 3.8 (ambulance) 4.2 (fire engine) 7.3 (pumper truck)
	18-foot-diameter traffic circle	5.4 (ladder truck) 3.2 (ambulance) 5.0 (fire engine) 7.0 (pumper truck)

continued on next page

Table 7.3. Emergency Response Time Study Results (continued).

Community	Measure	Delay at Slow Point (seconds)
Portland, OR*	14-foot speed humps	5.2 (fire engine) 2.9 (custom rescue vehicle) 6.6 (ladder truck)
	22-foot speed tables	3.0 (fire truck) 0.3 (custom rescue vehicle) 3.0 (ladder truck)
	16–24-foot oblong traffic circles	6.1 (fire engine) 3.1 (custom rescue vehicle) 8.4 (ladder truck)
Sarasota, FL	12-foot humps	9.5 (ambulance)

* Assumes a 35-mph response cruising speed.

Source: Unpublished documents supplied by the traffic calming programs.

- Traffic circles appear to create longer delays than speed humps. This fact must be weighed against the greater probability of damage to fire-rescue vehicles and injury to patients and emergency response personnel that can result from humps.
- The 22-foot speed tables appear to create shorter delays than 12-foot humps. This is as expected given the higher comfortable crossing speed of tables (for more on operating speeds, see chapter 4). Boulder's very long speed tables are the exceptions. The greater distances traveled on the longer tables more than offset the time savings resulting from higher operating speeds.[5]
- The shortest delays are experienced by ambulances without patients, the longest by ambulances with patients. When patients have already received basic life support at the scene and are receiving advanced life support en route, the latter delays may or may not be critical, depending on the medical condition being treated.
- Probably the most significant results are those for fire engines. Because all fire stations have emergency medical capabilities, fire engines are often first on the scene in medical emergencies. Their crews are trained to perform basic life support functions. Thus, the delays they experience at traffic calming measures may affect 100 percent of emergency calls.

Response Time Goals

When considering the delay added by traffic calming measures, thought should be given to emergency response times and emergency response time goals. Any delay entails some added risk to life and property. But the risk may be acceptable as long as response time goals continue to be met. Response time goals of several featured communities are presented in table 7.4. They apparently represent acceptable levels of risk to the communities adopting them, given financial constraints and likely outcomes in life-threatening situations.[6]

Table 7.4. Emergency Response Time Goals.

Community	Goal (minutes)
Austin, TX	3.5 (fire)
Berkeley, CA	4 (fire) 5 (medical)
Boulder, CO	6 (fire) 4 (medical)
Montgomery County, MD	5
Portland, OR	4
Seattle, WA	5

Source: Interviews and unpublished documents.

Given such goals, and given realistic delay estimates, communities have an objective basis for assessing traffic calming proposals. For example, Boca Raton, FL, initially tested midblock deflector islands on NW 3rd Avenue (see figure 7.4). As an alternative, a series of speed humps was proposed to lower speeds further. Although the fire chief opposed the alternative, it appeared acceptable from an emergency response time standpoint, given a reasonable delay estimate and a goal of 60 percent of emergency responses within 5 minutes (see table 7.5).

Strategies for Addressing Fire-Rescue Concerns

Many strategies have been used to address fire-rescue concerns about traffic calming. The featured communities have used avoidance of emergency response routes and emergency facilities, gradual escalation of traffic calming, communication, accommodating measures, redesign, innovations, and citizen support.

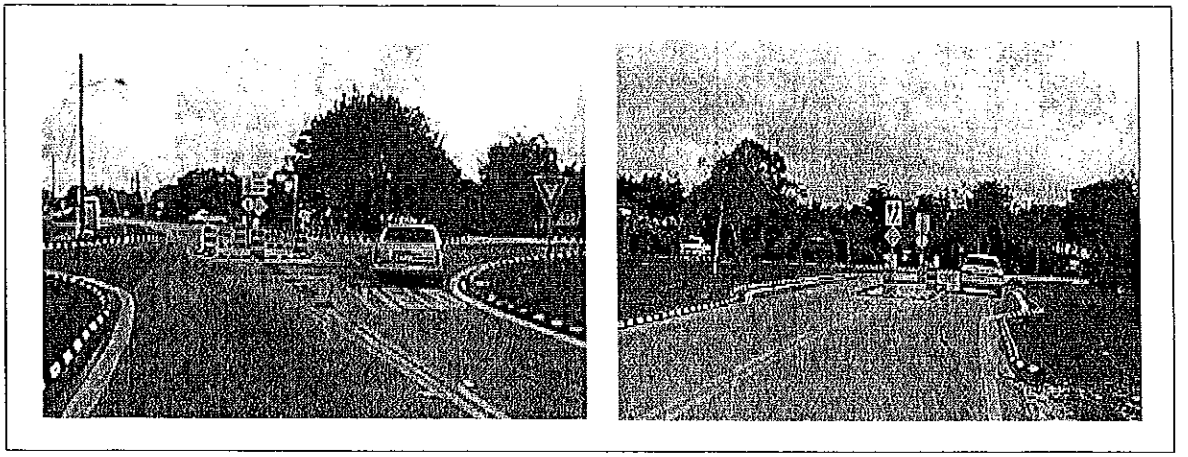


Figure 7.4. Test Installations on NW 3rd Avenue. (Boca Raton, FL)

Table 7.5. Response Time Comparisons for NW 3rd Avenue. (Boca Raton, FL)

Original conditions	3 mins 6 secs
Current conditions (circle and island)	3 mins 30 secs
Expected conditions (humps)	3 mins 48 secs

Source: K.B. Koen, "Speed Tables - N.W. 3rd and N.W. 5th Avenue," memo from the fire chief of Boca Raton dated February 2, 1998.

Avoidance of Emergency Response Routes

Traffic managers try to keep traffic calming measures off of emergency response routes. The challenge is twofold. First, many of the streets most in need of traffic calming make ideal emergency response routes for the same reasons they need to be calmed: higher operating speed and shortcut potential. In Boulder, 80 percent of the streets requesting traffic calming measures during 1995 were identified by the fire department as critical emergency response streets (see figure 7.5).

Second, the list of emergency response routes may prove elastic, as individual station captains contemplate every possible response route to every possible emergency. Austin, TX, had this experience. The fire department initially proposed that humps be kept off all streets with fire stations along them, then off all collectors, and finally, off all primary response routes (which included much of the city street network, according to different fire stations).

From a traffic calming perspective, the ideal hierarchy of routes would permit more traffic calming measures on secondary than primary response routes, and still more on tertiary response routes.

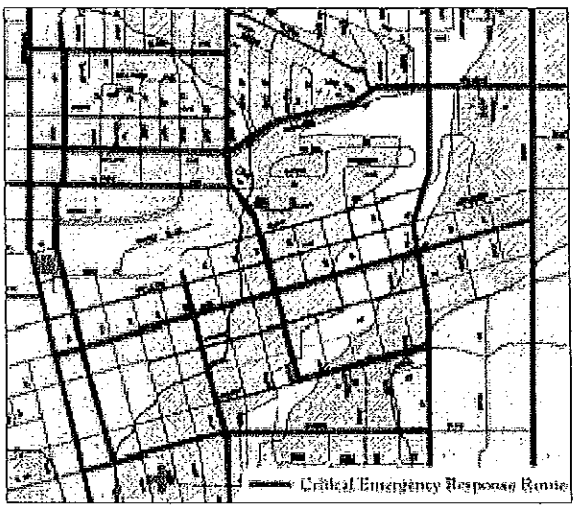


Figure 7.5. Critical Emergency Response Routes in the Urban Core. (Boulder, CO)

Source: City of Boulder, "NTMP/Emergency Response Map," March 8, 1997.

In the featured communities, when designation of the emergency response routes included a public input process, the implementation of traffic calming measures was helped. The outcome of the Portland process might have been much less favorable to the Bureau of Traffic Management if a citizens advisory group had not been involved. The Austin hump program might have remained in moratorium if a public focus group had not convinced the city council that emergency services should play an advisory role rather than have veto power (see figure 7.6). The Austin focus group process is described in chapter 8.

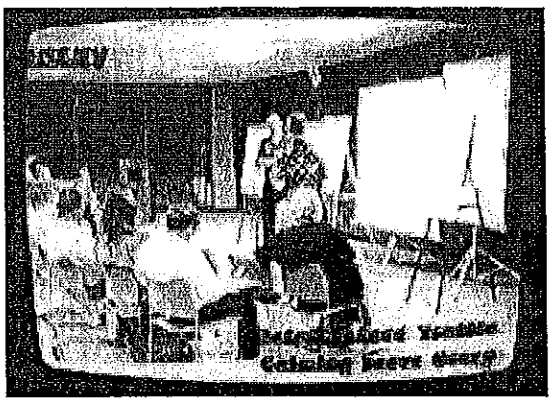


Figure 7.6. Focus Group Meeting Broadcast on Public Access TV. (Austin, TX)

Avoidance of Emergency Response Facilities

Experience has shown that there can be negative impacts if restrictive traffic calming measures are placed on access streets to fire stations. It is one thing for fire trucks to encounter traffic calming measures periodically as they respond to emergencies. It is quite another for them to encounter measures every time they leave the station.

In Charlotte, NC, the first set of 22-foot speed tables was placed on Laurel Avenue, down the street and across a major thoroughfare from a fire station. While collector roads with higher traffic volumes have been calmed with 22-foot speed tables, no installation has generated as much controversy as that on Laurel Avenue. A fire truck drove by while a photograph (shown in figure 7.7) of a table on Laurel Avenue was being taken. The driver felt compelled to stop and announce that the speed tables were the "worst thing that ever happened" to emergency response in Charlotte.

The same cautionary note applies to hospitals. With all the controversy surrounding traffic calming in Boulder, only two sets of measures have ever been removed. One was the series of speed tables installed on Edgewood Drive, adjacent to a regional hospital (see figure 7.8). Such a hospital generates more emergency vehicle traffic than a fire station and is likely to oppose any traffic calming efforts that emergency vehicles cannot avoid.

Gradual Escalation of Traffic Calming Measures

Many believe that engineering measures should be used only as a last resort, after education and enforcement efforts have failed. Whether this view is reasonable, given the effectiveness of education and enforcement, is subject to debate (see Chapter 5—"Traffic Calming Impacts"). But trying more conservative approaches does help neutralize opposition.

Bellevue has managed to calm its streets, including residential collectors, with less controversy than most other places. It has done so by gradually escalating to engineering measures. Phase I involves neighborhood speed watch, a traffic safety campaign, signing, restriping, and other less restrictive measures. Phase II involves engineering measures and is undertaken only if needed. Of 20 or so locations each year participating in Phase I, only 2 or 3 graduate to Phase II.

Boulder is taking a similar tack, with some high-tech twists. More emphasis is now placed on education and enforcement in order to "provide greater balance to the program." Photo-radar is being tested. In conventional speed watch programs, the worst that can happen to speeders is to receive warning letters. With photo-radar, warning letters are replaced by speeding tickets and fines (for more on photo-radar, see chapter 5).

Also, Boulder is testing speed-sensitive traffic signals that use loops to measure speeds upstream of intersections. In the "rest on red" test, all approaches to an intersection face red lights (see figure 7.9). If advance loops

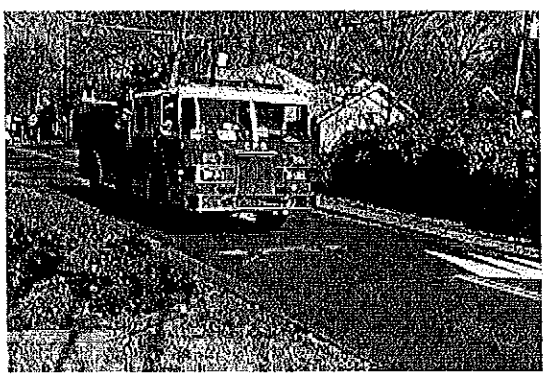


Figure 7.7. "Worst Thing that Ever Happened." (Charlotte, NC)

Figure 7.8. Former Speed Table Location on Edgewood Drive. (Boulder, CO)

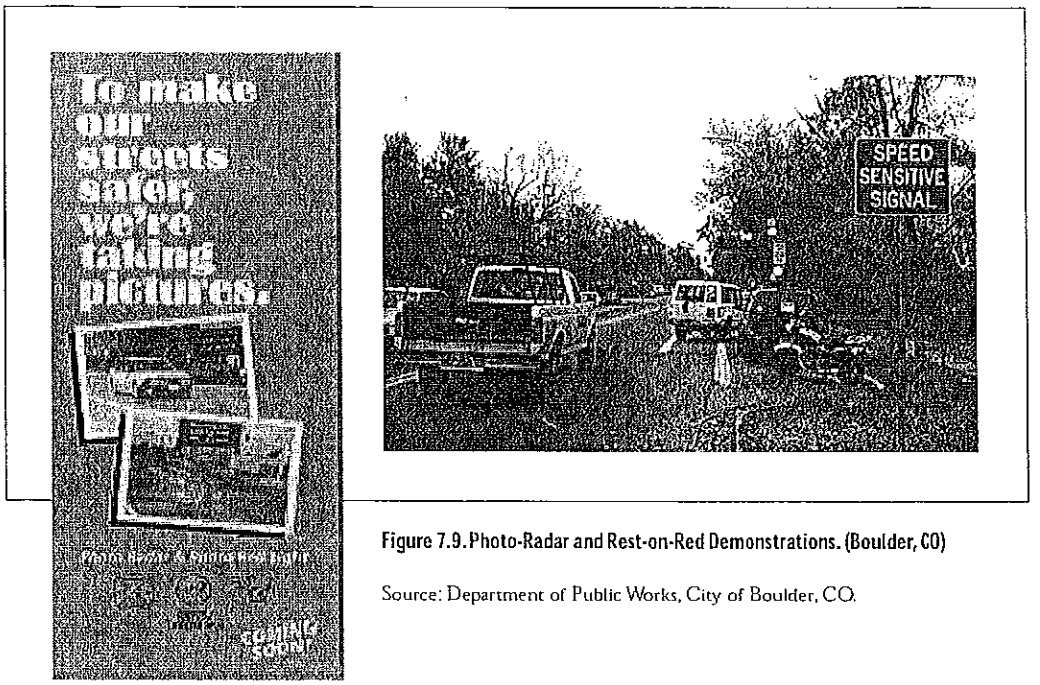


Figure 7.9. Photo-Radar and Rest-on-Red Demonstrations. (Boulder, CO)

Source: Department of Public Works, City of Boulder, CO.

detect an approaching vehicle moving at or below the desired speed and no other vehicle is being served on the cross street, the signal turns green. If the vehicle is detected to be speeding, the green phase is not triggered until the vehicle comes to rest in the traditional fashion at the stop line. In the "rest on green" test, signals along a main street will remain green as long as traffic is moving at or below the desired speed and no one is waiting on the side streets. Signals will switch to red if speeding is detected, thus penalizing or rewarding based on compliance with speed limits.[7]

Communication

As everyone knows, communication is the key to working out differences. Yet, emergency services are not always consulted about traffic calming plans. In one case, speed tables were installed down the street from a fire station, reportedly without prior consultation. In another case, humps were installed without warning or even adequate marking and signing. A fire-rescue vehicle was damaged and a staff member injured when the humps were encountered unexpectedly.

Among the featured programs, communication between traffic management and emergency services varies in nature and extent. In Tallahassee, FL, the fire department is simply informed of streets that will be treated. In Boulder, the fire chief exercises a virtual veto over new installations. In Austin, the fire department once had veto power but lost it when a public focus group recommended, and the city council adopted, an advisory role for the fire department.

Use of Measures that Accommodate Fire-Rescue Vehicles

Fire-rescue units nearly always oppose volume controls that lengthen response routes. Street closures, diagonal diverters, and median barriers may have this effect. In the featured communities, fire-rescue units demonstrated less opposition to half closures, semi-diverters, and forced turn islands that permit wrong-way movements up short one-way sections.

Fire-rescue units usually oppose speed humps and other vertical measures that rattle and rock speeding vehicles. Horizontal measures such as traffic circles and chicanes are preferred (even though they appear to create slightly more delay than vertical measures). Horizontal measures force emergency vehicles to slow down, but they do so without the jostling that accompanies vertical displacement.

In the featured communities, narrowings present little problem for fire-rescue vehicles. This applies to chokers, center islands, split medians, and even neckdowns. The Boulder fire chief, who opposes speed humps and traffic circles, accepts neckdowns because his department plans emergency access routes to minimize turning movements ("they plan for straight shots").

Traffic calming measures favored by fire-rescue units are among the most expensive, involving curb work and landscaping. Thus, these measures may prove cost-effective only on emergency routes that get a lot of use.

Whatever measures are used must be designed for fire trucks. Several featured programs test designs by placing cones on the roadway and running the fire department's largest vehicle around them (see figure 7.10). Others simply work off plans using AASHTO's turning movement templates for longer vehicles.[8]

The challenge to designers is this: Geometric designs that accommodate fire trucks are oversized for automobiles. Vehicle deflection will be minimal, as will be the impact on automobile speeds. The Phoenix Fire Department's requirement that half closures be 16 feet wide, to permit turns in and out, invites violations by motorists who see an open street almost two lanes wide (see figure 7.11). Such challenges can be met with clever designs such as Portland's half closure with a bike lane (see figure 7.12).

Redesign of Traffic Calming Measures

Another strategy is to modify traffic calming measures to better accommodate fire-rescue vehicles. Tight traffic circles, street closures, and full diverters are not favorites of emergency services. Yet each can be redesigned to be more acceptable. At the request of the fire department, Orlando changed the design of its traffic circles, lowering the lip from 4 to 2 inches for easier mounting (see figure 7.13). Dayton opted for locked gates rather than landscaped street closures to maintain emergency access to the Five Oaks neighborhood (see figure 7.14). Boulder outfitted all closures and diverters in one neighborhood with removable bollards (see figure 7.15).

Speed humps and speed tables are not favorites, either. Yet, they too can be designed to be more acceptable to fire-rescue units. Austin and Gwinnett County ran emergency vehicles over multiple hump profiles. Based on the results, these two programs now use nothing but 22-foot speed tables, the least jarring alternative tested. Eugene has placed a moratorium on 14-foot speed humps in re-

Photo Credit: Jim Mundell

Figure 7.10. Field Test with a Fire Truck. (Seattle, WA)

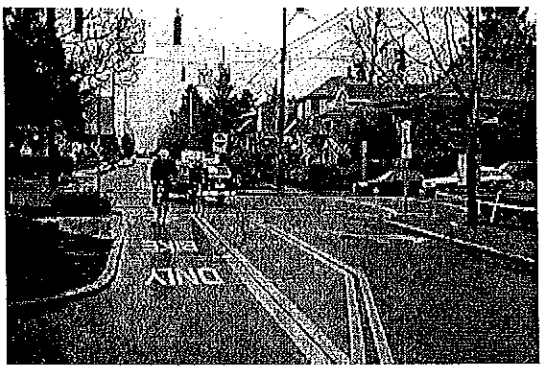


Figure 7.12. Half Closure that Discourages Violations. (Portland, OR)

Figure 7.11. Half Closure that Invites Violations. (Phoenix, AZ)

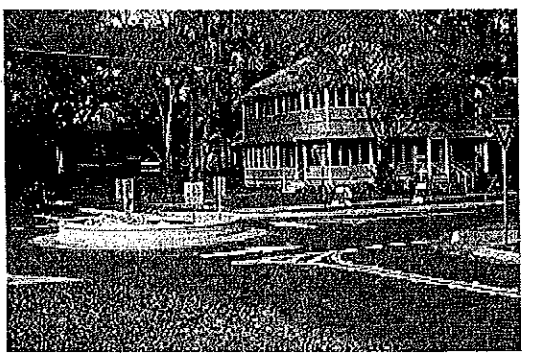


Figure 7.13. Traffic Circle with a 2-inch Lip to Accommodate Fire Trucks. (Orlando, FL)

Figure 7.14. Gated Street Closures. (Dayton, OH)

Figure 7.16. 46-foot (12 foot, 22 foot, 12 foot) Raised Crosswalk. (Boulder, CO)

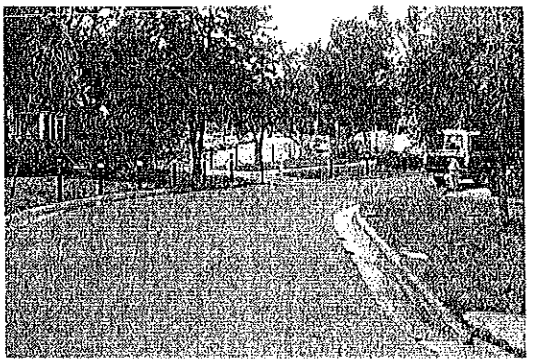


Figure 7.15. Diagonal Diverter with Removable Bollards. (Boulder, CO)

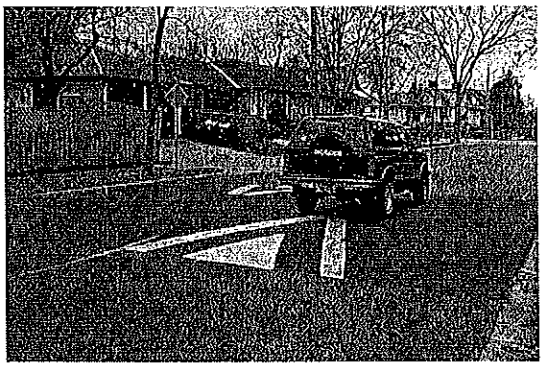


Figure 7.17. 32-foot (6 foot, 20 foot, 6 foot) Speed Table. (Minneapolis, MN)

sponse to fire department concerns, but continues to build longer raised crosswalks that have less effect on emergency vehicles. Boulder; Minneapolis, MN; and several other places have built speed tables or raised intersections big enough for the entire wheelbase of a fire truck to rest upon the flat section (see figures 7.16 and 7.17). These measures reduce the jolt to fire trucks even more than do the 22-foot tables.

Fire-rescue, in turn, has an obligation to keep its requests reasonable. The Public Works Department in Eugene planned to install chicanes on a short, dead-end local street leading to a high school; the purpose was to discourage speeding. After a field test showed a slight delay with the chicanes (no more than a few seconds over the entire length of this short street), the proposed chicanes were replaced with midblock deflector islands. To further accommodate the fire chief, the dimensions of the deflector islands were cut back. Note in figure 7.18 the difference between island dimensions as built versus as marked out originally.

Traffic Calming Innovations

Austin has tested speed "cushions," dome-shaped speed humps that are narrow enough to be straddled by wide-bodied vehicles but must be mounted by passenger cars. Widely used in Europe to minimize impacts of traffic calming on transit buses and emergency vehicles, speed cushions may or may not prove as useful in the United States. Fire trucks in the United States have inner and outer wheels on the rear axles, making the inner wheels closer together than on a passenger car. The problem is illustrated by dimensional data from Austin (see table 7.6). Still, fire-rescue units in Austin favor the cushions over either 12-foot humps or 22-foot tables since their front wheels can straddle the cushions and the rear wheels need ride up on only one side. Austin has recorded very significant reductions in 85th percentile speeds (the speed below which 85 percent of vehicles travel) with speed cushions—comparable to those experienced with speed humps—and therefore plans to install the cushions permanently (see figure 7.19).

Benefits of a roundabout

Safety

- Roundabouts have far fewer conflict points than other intersections because they eliminate potential for head-on, right angle, and left-turning traffic crashes.
- Studies have shown a 90% reduction in fatal crashes and 75% reduction in injury crashes when compared to a signalized intersection.

Function (Delay and Capacity)

- By yielding at an entry rather than stopping and waiting for a signal light, the average delay during rush hour is typically reduced.
- During light traffic conditions, roundabouts cause almost no delay.

Environment & Beauty

- Fewer starts and stops reduce both fuel consumption and air pollution
- Islands in the roundabout provide an area for landscaping or other aesthetic features.

NEW MEXICO DEPARTMENT OF TRANSPORTATION

District Five

7315 Cerrillos Road
PO Box 4127
Santa Fe, NM 87507
Phone: 505-827-9500
Fax: 505-827-9509
www.nmshtd.state.nm.us

Driving Roundabouts

NMDOT

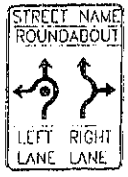
District Five
7315 Cerrillos Road

Santa Fe, NM 87502
1-800-388-6630

District Five Traffic Section
505 476-4240

Roundabout Signs

There is a roundabout ahead—slow down.



There are two entry lanes to the roundabout; choose the correct one. If you are turning left, get in the left lane.

Yield to all traffic in the roundabout. Vehicles already in the roundabout have the right of way.

Drive counterclockwise only in the roundabout.

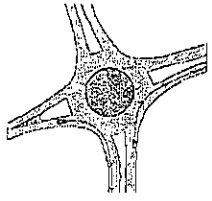
General Guidelines

- Do not stop in the roundabout.
- Be aware of pedestrians.
- Turning traffic should choose its respective lane before entering the roundabout.
- If making a right or left turn, use your turn signals.
- Never change lanes in the roundabout.

Driving in Roundabouts

Right Turns

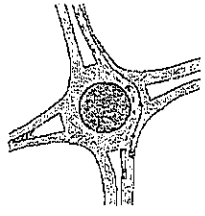
- Slow down and prepare to yield as you approach the roundabout.



- On the approach you must be in the right lane (if it is a dual lane roundabout).
- You must yield to the traffic already in the roundabout.
- Stay to the right as you approach your turn.
- Place your right turn signal on until you have exited the roundabout.

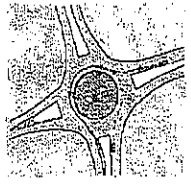
Straight Ahead

- Slow down and prepare to yield as you approach the roundabout.
- If entering a two-lane roundabout, and the right lane is blocked due to dense traffic or road obstruction, approach and continue through the roundabout in the left lane.
- You must yield to traffic already in the roundabout.



Left Turn or U-Turn

- Slow down and prepare to yield as you approach the roundabout.



- Enter the roundabout in the left lane (if there is a two-lane approach) and stay in that lane throughout the roundabout.
- You must yield to traffic already in the roundabout.
- Place your left turn signal on until you have exited the roundabout.

Other Users

Pedestrians

- Stay within and cross only on the designated walkways at all times.
- When safe, cross the road one lane at a time, using the median island as a refuge before crossing the next lane.
- Use pedestrian flashers when available.

Bicycles

- Approach the roundabout in the bicycle lane.
- Where the bicycle lane ends, either use the bicycle ramp up to the sidewalk or merge with traffic.
- Bicycles using the street should follow the same rules as motorists. Be assertive and occupy the middle of the lane.
- Bicycles using the sidewalk should follow the same rules as pedestrians by crossing the street as needed at marked crosswalks.

Emergency Vehicles

- Do not enter the roundabout when emergency vehicles are in the vicinity; pull to the side.
- Allow vehicles in the roundabout to clear in front of the emergency vehicle.
- If in the roundabout, exit the roundabout and pull to the side.
- DO NOT STOP IN THE ROUNDABOUT.

Trucks & Other Large Vehicles

- Roundabouts are designed to accommodate large trucks, buses, and emergency vehicles.
- Large trucks may, when necessary, drive on the raised pavement area, called a truck apron, in the center of the roundabout. Usually only the rear wheels track on the apron.
- Cars should not use the raised truck apron.
- Cars should follow behind large trucks or buses and never along side these vehicles.

PRESENT: Michael Lawler, John Denoncourt, Catherine Przekaza, Vivian Blondeau (Selectmen representative), Keith Allard (School Board representative), Lowell Von Ruden and James Raymond (Planning Board representatives), Dan Reidy (Economic Development Council representative), Robbie Grady (Goffstown Main Street Program representative), Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, Fire Chief Richard O'Brien.
Absent: Cynthia Boisvert and Police Chief Patrick Sullivan.

7:30 AM Meeting Called to Order by Stephen Griffin

ORGANIZATION:
Stephen Griffin started this first organizational meeting of the Village Planning Committee by thanking members for serving and with each member introducing themselves. He explained that this is an ad hoc committee which is subject to the Right to Know law and all meetings will be posted and minutes taken. Email between members is restricted to schedule changes only. Committee was advised of the applicability of the Code of Conduct.

The following documents were distributed: Village Planning Committee Membership List; Village Planning Committee Purpose; Agenda Outline with Meeting Schedule; Current Planned Expenditures in Village Area; Village Section of the Corridor Plan; Map of the Goffstown Village Plan from the town's Master Plan; and Goffstown's Code of Conduct.

Committee agreed to:
1. invite the Bus Center to receive their input on item #7 which is scheduled 7/18/08
2. start all future meetings at 7:00 AM
3. amend the schedule to include a meeting on 8/11/08 which will be chaired by Carl; topics scheduled for 8/18/08 will begin on 8/11/08.
4. add to the Meeting Agenda under #6. "c. Wallace and Mast Road Intersection".
5. add section for road plan phasing, maintenance of improvements, and marketing recommendations

PURPOSE:
Members discussed the purpose of committee. Consensus was to review planning documents (Corridor Study and Master Plan), make recommendations regarding design elements in the Village Area which impact planned road projects and coordinate those projects with the 250th Town Anniversary. Concern was expressed regarding whether or not Pinardville section of town should be included. It was expressed that the roads in CIP during the next few years are in the Village Area, and coordinating those efforts with the Master Plan, Corridor Study and the 250th Anniversary celebration is the scope of the committee.

ROUTE 114 CORRIDOR STUDY:
Only the section of the Corridor Study related to the Village Area was copied for members. Topics of interest included: street cross sections; sidewalks, landscaping & lighting; on-street parking; shared and interconnected parking; alternative routes through village; South Mast/Pleasant St. gateway common; North Mast St. cross section with landscaping; and South

Mast St. cross section with landscaping. Document is for planning purposes, does not serve Carl's purpose (engineering).

VILLAGE PLAN MAP:
The objectives of this map were presented: interconnectivity and continuity of vehicular facilities; interconnectivity and continuity of pedestrian facilities; pedestrian friendly design; traffic calming techniques; shared parking; architectural compatibility.

There was a discussion on whether or not this committee should be looking at budget or CIP. DPW Director felt that any recommendation regarding design should consider future maintenance costs. Suggestions included looking at alternative funding or improvement district, and use of volunteers. It was observed that volunteers can only provide certain type of maintenance, volunteers tend to be the same people, and the danger of depending upon volunteers for required maintenance.

It was emphasized that you need to involve all the stakeholders in the decision making process to get buy in. It was suggested to add a section towards the end of the meeting agenda to look at ways to educate and involve stakeholders in the process.

The implementation of the recommended design was also discussed. The need to coordinate one section at a time, only tear up the road once, and offer alternative routes or parking was discussed.

OTHER INFORMATION REQUESTED:
1. Map defining the boundaries of the Village Area for the purpose of this committee: Park Lane/Mast Road to Church Street/North Mast Road (near cemetery) including urban compact area of Pleasant Street and portion of Elm Street.
2. Traffic Studies and Intersection Designs: DOT – High, Main, Elm Streets; and McFarland/Johnson – Pleasant Street and Mast Road; and Wallace and Mast Roads
3. Planned Water and Sewer Projects in this area during the next few years
4. Drainage needs in Village Area
5. Information will assist in overlaying the priority, funding and timeline of projects.
6. Only member who also sits on the 250th Anniversary Committee is Robbie Grady so she will be this committee's link to their planned events.

Members expressed thanks to the Select Board for establishing this committee and allowing all stakeholders to have input.

Next meeting is scheduled for 7:00 AM 7/28/08

8:28 AM Meeting Adjourned

Respectfully submitted,
Sue Desruisseaux

Subject to committee approval.

PRESENT: Michael Lawler, John Denoncourt, Catherine Przekaza, Cynthia Boisvert, Vivian Blondeau (Selectmen representative), Keith Allard (School Board representative), Lowell Von Ruden (Planning Board representatives), Dan Reidy (Economic Development Council representative), Robbie Grady (Goffstown Main Street Program representative), Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, Fire Chief Richard O'Brien and Police Chief Patrick Sullivan.

Absent: None.

Others Present: Cathy Wooten.

7:00 AM: Meeting Called to Order by Stephen Griffin

MINUTES
Vivian Blondeau moved that the minutes of 7/21/08 be approved as written. Motion seconded by Michael Lawler, vote 13-0-0 for approval.

DESIRABLE GOFFSTOWN IMAGES:
Stephen Griffin started this meeting with images in order to begin discussion. He and Carl Quiram had collected 23 images from Goffstown, other towns and from design award submissions.

The first two showed the Church Street Mini-park and Rotary Park, representing the quality of design that Goffstown has previously constructed and obviously desires. The third showed public-private separation via a low curb and the fourth pedestrian protection created from a landscape buffer. The sixth, a brick crosswalk, led Carl Quiram into a discussion as to the various ways to designate a cross walk. More specifically, he discussed various optional materials from line painting, which must be regularly re-done; embossed concrete, which does not deal very well with salt; to a colored epoxy insert material, which is very expensive. He noted that the Henry Bridge roundabout cobbles were less expensive than the epoxy. Photos eight and nine illustrated a bench from Charlottesville, Virginia, which keeps the pedestrian in mind. It is long enough for two persons, but short enough for one person to occupy it alone when sitting at its center. Additionally, this bench is not bolted down, allowing its occupant to adjust its position. While Charlottesville is a college town, benches have not disappeared as one might have expected.

Photo ten illustrates a desirable bicycle facility, but requires sidewalk space. Photo twelve illustrates a commercial streetscape at Goffstown's scale, with awnings creating a sense of pedestrian enclosure, and a row of trees and parking protecting the pedestrian. Photo thirteen illustrates a median as a method to gain more tree cover and to lessen the scale of a broad street. Photo fourteen illustrated a small-scaled residential street, while fifteen illustrated one that had been partially converted to commercial use. The remaining photos illustrated various types of street furniture and furnishings, with one indicating relative costs of various alternatives.

BASIC APPROACH:
Traffic calming techniques that were discussed included bump-out curbs, crosswalks that provided a clear visual break and a break in feeling for the driver, crosswalks utilizing a raised platform that would provided a different feel for the vehicle while being smooth enough for the pedestrian, bump-out curbs, a non-straight street as Main Street with parking on alternate sides as shown in the current Village Plan, the natural vehicle slowing caused by a visual sense of narrower driving lanes by both moving the white edge lines inward, or spreading the center double yellow lines apart. In both of these cases, creating a narrower, 10-foot vs. 12-foot, driving lanes. Also mentioned were gateway treatments.

The Committee brainstormed a range of options. First, the by-pass option, which had been brought forward in the 1970's, was removed from further consideration due to high cost, lack of open land, and its by-passing of the village. Examples of one-way loop systems were discussed. While being left on the table for now, it was noted that this system worked in Dover, but had failed in Laconia. It appeared that this system was designed primarily for the commuter, and many times it left the resident on the wrong side of the on-way loop for a desired errand. It was suggested that this option should be considered only after other alternative had been completed.

The Committee also discussed the use of multiple routes through the village, thereby providing for more capacity and driver choice, but avoiding the disadvantages of a one-way system. This included both the use of existing alternate streets, new connections and the interconnection of parking areas. It was noted that such interconnection of parking areas was difficult to achieve with multiple property owners, but that it was desirable for parking once for multiple trips and for providing more alternatives to fit an individual's specific trip needs. Comprehensive parking management would also be desired.

COMMITTEE CONSENSUS:
It was the Committee's consensus that:

1. Through commuter traffic should be directed through the village, be allowed to pass-through, but not be catered to an any way that would be detrimental to the village's function or to its pedestrian friendly character, and
2. Traffic calming techniques should be utilized within the village to allow, but slow down, vehicle passage and, thereby, to provide for pedestrian safety and comfort.

OTHER INFORMATION REQUESTED:

1. A current street plan of the village showing town-owned land.
2. Traffic studies, accident data and traffic counts, of the three major intersections: Route 114 with (a) High and Elm Streets, (b) with Pleasant Street and Mountain Road, and (c) with Wallace Road.

Next meeting is scheduled for 7:00 AM on 8/4/08

8:00 AM Meeting Adjourned

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

Village Planning Committee Minutes
August 4, 2008
1

PRESENT: Michael Lawler, John Denoncourt, Catherine Przekaza, Cynthia Boisvert, Vivian Blondeau (Selectmen representative), Lowell Von Ruden (Planning Board representatives), Dan Reidy (Economic Development Council representative), Robbie Grady (Goffstown Main Street Program representative), Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, Fire Chief Richard O'Brien and Police Chief Patrick Sullivan.

Absent: Keith Allard (School Board representative).

Others Present: Sandy Rowe (Goffstown Truck Center, Inc., Safety and Training), Terri Modesto (Goffstown Truck Center, Inc. Terminal Manager), and Cathy Wooten.

7:00 AM: Meeting Called to Order by Stephen Griffin

HANDOUTS
Stephen Griffin provided handouts, as previously requested, of village base maps at various scales.

Chief Patrick Sullivan provided traffic information that his staff had collected, relative to the South Mast/Wallace Roads intersection, the Mast/Elm/High Streets intersection and the Mast/Pleasant Streets intersection. This information included intersection dimensions, number of vehicles and average speeds, all at 15-minute intervals. Current survey data summary, for 6:00 AM to 6:00 PM, included Wallace Road at South Mast: 2,046 vehicles at an average speed of 30.64 mph; New Boston Road: 2,139 vehicles at an average speed of 33.44 mph; and High Street 1,624 vehicles with an average speed of 33.60 mph.

Carl Quiram noted that he had not yet found the 1996 NHDOT study of the Mast/Elm/High intersection. He, however, brought copies of the 206-206 McFarland-Johnson intersection studies, which had been completed for the Mast/Wallace Roads, and the Mast/Pleasant Streets intersections, so that all of the traffic data would be available to the committee. In summary, the findings were that the side roads were at a level service "f"; Mast Road, itself, was not the issue as much as were the turning movements for getting onto Mast Road; and that the most favorable solution taking into account traffic demands and available right-of-way to accomplish the various alternatives would be the roundabout. Signalized intersections required higher impact property takings for sufficient right-of-way for the required turn-lane approaches than did the roundabout solutions. He also reported on traffic studies and how they related to these intersections, for two other developments that related to these intersections. One was for the Bog Road multi-family project currently before the Planning Board and the other was for the recently Planning Board-approved Worthley Hill Road subdivision. Carl also noted that we had SNHPC traffic counts for a number of points, some of which relate to these intersections, and that this data had been utilized by McFarland-Johnson.

Cynthia Boisvert noted that for the Wallace/Mast intersection, the morning hours were the worst in terms of traffic and for this short period of time there was no solution for "perfect " traffic flow. Quiram concurred that there would always be some delays.

Chief Richard O'Brien noted that roundabouts, compared to signalized intersections, which the fire vehicle can preemptively control, resulted in some response-time delay. General discussion suggested that this was a national problem, caused by general unfamiliarity with this type of intersection and how to drivers ought to respond when hearing a siren, which was best solved with public education.

Pedestrian traffic at this intersection was then discussed. Cynthia Boisvert and Carl Quiram noted that the McFarland-Johnson recommendation had been for a crosswalk on Shirley Park and one across Mast east

of the intersection, going to the existing sidewalk on the east side of Wallace Road. This is a safer situation than now, as it limits the number of crossing points, utilizes the traffic splitter island as a "safe zone" for the pedestrian, and is also where traffic speed has been slowed.

Sandy Roach, Goffstown Truck Center, was asked to describe the school bus situation relative to these intersections. She described school travel hours, 7:00-8:00 and 3:30-3:15, and how their issues were identical to other drivers, but that crossing-guards assisted them where turning might otherwise be difficult. Steve Griffin noted that the crossing guards would still be needed if the intersections were improved, which Sandy and Chief Sullivan confirmed.

Carl noted that the Pleasant-Mast intersection also had Mountain Road and East Union, and that the roundabout configuration required a shouting of the splitter islands to have room for a left turn from East Union. Roach noted that this was required because of the intersection configuration at the other end of East Union. Cathy Przekaza noted that this alternate intersection might be helped with some property taking, though, as others noted, the sun might still be an issue. Prospect Street was also noted as narrow, steep and with even less sight distance to the west.

Cathy Przekaza requested talking about construction phasing to avoid adding to the school bus issue. Sandy asked not to have construction on alternate routes at the same time. Use of roundabout for buses may take a little more training, but they are adjusting to them. Robbie Grady noted that the bus-car-relationships in a roundabout presented another public information need. Dan Reidy concurred. It was noted that GTV was limited as much of the through traffic drivers were not from Goffstown. Chief O'Brien noted the potential of a warning light at the center of the intersection or signs for emergency vehicles warning, and where sensors might be located. Robbie Grady noted the common place of roundabouts overseas and that an answer for emergency vehicles might be from their experience. Chief Sullivan noted the state's limitations, which are placed on driver's education programs.

The question of the 1996 NHDOT study of the Mast/Elm/High intersection was reintroduced. Robbie Grady remembered that this study proposed the taking of land for multiple lanes and the removal of a great deal of Main Street parking, and was very expensive. Dan Reidy felt that seeing it again, however, was important to the process, even if it was known to be an undesirable solution. Carl will look for it.

Cathy Przekaza noted that the pattern that she is hearing is that we have restricted arteries in terms of traffic, we are limited in our width, and we are focused on roundabouts, can we look at the idea of a bigger roundabout created by doing a one-way through the village. Steve Griffin noted that the primary issue was how does one enter Route 114? The one-way circle within the village is something that should be considered after we attempt to fix intersections. I believe that many times a one-way system, for all but the peak commuter hour, ones desired destination is in the opposite direction, and as we noted earlier, we don't want to gear the entire system to the commuter problem, at the expense of our residents' use of the village. After fixing intersection to the extent we consider reasonable, a one-way system should be considered, and would certainly be more desirable than a road widening. Vivian Blondeau asked about trying a one-way alternative, a counter clockwise circle using Main, Mast, White and Church Streets. Carl then noted the sign, paint and island cost, driver habit disruption and the required driver education for such a change was discussed.

When Depot Street's potential extension was introduced, Steve Griffin noted that it was listed because it was an option, and if the village were fully built-out it probably would be needed, but that he believed it was not currently needed for village circulation. Building this extension today, at its cost and impact, is not a reasonable way to solve the Main/Elm/High/Mast intersection problem.

Cathy Przekaza asked for accident data so that intersections might be prioritized.

Carl Quiram suggested that the Main/Elm/High/Mast intersection, perceived by the driver as very hazardous, resulted if greater driver care and a lower accident rate. Chief Sullivan concurred and noted that the Wallace/Mast intersection was more dangerous as the traffic through the intersection was moving at a greater speed. Traffic calming at this location would be a significant benefit.

There was discussion with Sandy Roach about bus use and car pooling, required education and possible incentives, which might help to reduce some of the peak morning traffic. Ninth and tenth grade student are the greatest bus ridership. Parents want to drive younger children, and the older ones have access to cars and need more flexible schedules. The "safe routes to school" grant program was mentioned as being potentially helpful.

Dan Reidy noted that we should continue to discuss, not just these three intersections on Route 114, but the more comprehensive view. For example, in viewing the Mast Pleasant roundabout, I include, for example, the left turn for my infrequent use of Prospect Street, Factory Street which crosses the rail trail and provides access to what might happen to the Janigan property, a huge draw for the community. We need to think honestly about what might happen here. Cathy Przekaza asked about corresponding with the Planning Board. Lowell Von Ruden noted that the Board was well aware of these issues and had discussed the. Steve Griffin noted the status of this particular project relative to the Planning Board's process.

Next meeting is scheduled for 7:00 AM on 8/11/08

8:05 AM Meeting Adjourned

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: Michael Lawler, John Denoncourt, Cynthia Boisvert, Planning Board representatives Lowell Von Ruden, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, and Fire Chief Richard O'Brien.

Absent: Catherine Przekaza, Selectmen representative Vivian Blondeau, Economic Development Council representative Dan Reidy, Police Chief Patrick Sullivan and School Board representative Keith Allard.

Others Present: Sandy Rowe (Goffstown Truck Center, Inc., Safety and Training), and Terri Modesto (Goffstown Truck Center, Inc. Terminal Manager).

7:10 AM: Meeting Called to Order by Stephen Griffin

MINUTES

July 28, 2008

Lowell Von Ruden moved to accept these minutes as written, John Denoncourt seconded, vote 8-0-0, motion passed.

August 4, 2008

Corrections: spelling of (1) Sandy Rowe's name on page 2, (2) "2006-2008" McFarland-Johnson study on page 1, (3) "2:30-3:15" as afternoon bus hours on page 2, (4) "shortening", not shouting, in the third paragraph of page 2, (5) "them", not the, in the next to last sentence of the last paragraph, and (6) Mike Lawler suggest the possibility of changing some of the feeder roads to be right-turn-only for which there was a general discussion.

Lowell Von Ruden moved to accept the minutes as corrected, seconded by Chief O'Brien, vote 8-0-0, motion passed.

HANDOUTS

Stephen Griffin provided handouts, as previously requested, of accident data, and village base maps with several intersection alternatives for each of the three major intersections, the first of which will be discussed at this meeting.

MAIN/ELM/HIGH/NORTH MAST INTERSECTION

The map used for this depiction is the master plan map, which does show a street, an extension of Smith, and a building north of the Library, neither of which exists. The remainder of the background map shows existing buildings.

The first map, option 1 is a "stop" controlled intersection. This was shown, as the major problems of this intersection are the need for left-turns, more specifically, North Mast Street to Elm Street, High Street to Elm Street and Elm Street to Main Street. The premise was that, as a least cost and least impact solution, a "stop" would create openings for these left-turn movements.

Through discussion, it was determined that this solution was inherently non-workable for a number of reasons. (1) The intersection would not function as a typical 4-way stop. The intersection would be of such a length from the vehicle drivers heading north on Main Street, heading south on High Street, and heading south on North Mast, would not perceive that they were in a single intersection. Driver eye-to-eye contact would not be possible. (2) The sight-distance between the vehicle heading north on Main Street and the one heading south on North Mast would be insufficient and therefore, unsatisfactory. (3) Stop conditions might cause lengthy back-up queues, harmful to both traffic flow and emergency vehicles. And (4) the church exit would be within the intersection, creating a fifth stop street condition.

The second and third maps, options 2A and 2B were discussed together. Both of these solutions were for roundabouts, the same size as currently constructed at Henry Bridge, Center Street and Goffstown Back Road. The only difference between these options is the traffic splitter island toward Main and Elm Streets. Option 2A shows the longer island, which prohibits left turns into and out of Elm Street. This raises the issue of how does one accomplish these maneuvers, by using Mill and Cottage Streets? Option 2B shows a shorter island, allowing these left-turns. This leaves the undesirable potential of a North Mast left-turn queue backing-up the roundabout. There might, therefore, be a "yield" sign in front of the common for northbound Main Street. Left-turners onto Elm would, therefore, be able to clear the intersection. In response to the question of the percentage of the AM peak from North Mast wanting the left-turn onto Elm, Carl Quiram estimated 35 to 40 percent of the flow; i.e. 6,000 to 8,000 cars a day.

Mike Lawler noted that if this left turn demand required Mill and Cottage Streets, much of the traffic would, in essence, be diverted into staying on Route 114 in lieu of using Elm Street, which would only add to other problem intersections. Carl responded that we would also be doing something to these other intersections, with the driver then determining which alternative was less painful. Robbie Grady noted how it was desirable to not significantly discourage this alternate route to Manchester, relieving Route 114. Chief O'Brien also noted the emergency vehicle requirement to turn onto Elm Street and the inability of Cottage Street's design capacity to handle this additional flow. Carl Quiram noted that the beauty of the 2B solution would be that, if the left turn yield didn't work, the splitter island could then be extended. Cynthia Boisvert suggested that this be a stop sign instead of a yield. The north bound morning flow is lightest at the time when the southbound Mast Road flow wants to turn left onto Elm Street, and visa versa. The worse thing would be how far the back up might be through the village. John noted that the stop sign might also cause drivers to use other streets, thereby avoiding the intersection. This raises the issue of how fast does one travel on Church Street or through a parking lot, to try to avoid the intersection.

Robbie Grady noted that there were other proposals that affected this intersection, including an extension of Summer Street, through to Church Street, and the interconnection of parking lots, all of which allowed intersection avoidance. In this case, Summer Street allows avoidance without as much residential neighborhood impact. Cynthia Boisvert noted the property impact on the Church and Carl Quiram noted a like impact on the popcorn stand, though there would be area to the north for its relocation.

Stephen Griffin inquired as to Sully's existing Mast Road parking concerning this solution. Carl Quiram noted the back-up potential risk in the roundabout with Sully's parking backing onto Mast Road. John Denoncourt noted that he and the Lions might also have options of a land trade, improving both situations, though the Lions Club property was a "deeded" common. Stephen Griffin, in response to the question, explained the status of the property just north of the Library and the Library's planning process. The approved plan, however, does not make the Elm Street-High Street connection shown on the master plan. Mike Lawler noted the impact on the Bank if the North Mast to Elm Street left turn were not allowed. Sandy Rowe then discussed the impact of this option on their school buses. They use the Elm to Main Street flow, and visa versa. Cynthia Boisvert noted that the New Boston direction might also be achieved by crossing at the blueberry farm, to which Sandy Rowe agreed.

For comparison, Carl Quiram explained the conceptual layouts that DOT had proposed in 1996. There were three conceptual layouts analyzed. The first involved the relocation of Elm Street, swinging its intersection to the south, so that it met Main Street at a right angle. This alignment required the acquisition of three properties; a short section of Elm Street adjacent to the park would be discontinued, requiring special treatment for access to the bank and video store. The popcorn wagon might be relocated to this area allowing more parking at its present location. Parking would be restricted to the east

side of Main, south of Flanders Court. This would maximize the separation distance between Elm and High. The current Laundromat area might need to be additional parking. The second alternative maintains the existing layout as much as possible, while providing two lanes of traffic in each direction, as well as turn lanes. On-street parking would be restricted to outside of the intersection limits, Flanders Court to past Sully's, the popcorn stand area is needed for additional parking and for site distance around the curve, which is designed for 30 mph. Alternative three increases this curve radius to 100 meters, for which two building must be relocated or razed. Carl Quiram reported the 10 year old estimated costs: for alternative 1: $700,000 plus lot acquisitions and strip impacts, alternative 2 was $600,000, alternative 3 was $575,000, plus two buildings. John Denoncourt noted, as he did in 1996, that this would put the village out of business. Lowell Von Ruden echoed this sentiment noting that this approach, which was to maximize traffic considerations at the expense of the pedestrian and the village, was the opposite of the Master Plan and Main Street objectives. Robbie Grady concurred. She noted that the Elm Street relocation would have taken out two buildings, which housed five businesses.

Carl Quiram then reviewed the last solution, which was for the double roundabout solution. It had been less detailed as it obviously had much more negative impact. Carl noted that there was insufficient queue distance between the roundabouts, and was therefore not workable. Mike Lawler suggested that the southern roundabout location might be a better location that the second alternative. Carl noted that this location didn't help High Street, which was a worse situation than Elm. Mike Lawler felt that it might slow the traffic down and thereby help Elm Street. It was asked, what if High Street were a right-turn only? This pushes the traffic onto Smith and Maple, making the Maple Avenue School situation much worse. In response, Robbie Grady noted the essential social need for the common, which would be lost with this option. When Chief O'Brien questioned the need for the common as this locatio, Robbie Grady noted the need for its visibility as a vandalism deterrent. Visibility is also a marketing device. Stephen Griffin noted how this roundabout location would be off-center, requiring a very long splitting island to the north to get past the High Street leg. Existing buildings, on the other hand, interfere with a more central location of this alternative. Robbie Grady also noted that this location caused the loss of parking on a portion of Main Street, as well as the impact on the bank.

The tentative consensus is for alternative 2B, with a stop sign for Main. Carl Quiram thinks this may be over-kill, and a stop sign could be added if required. Lowell Von Ruden inquired about pedestrian movements and Carl Quiram explained that pedestrians would cross via the splitter islands, which could provide a pedestrian refuge.

There are a number of issues to be worked out, even with this alternative, including the impact of Library traffic, impact on the Church property and the Lions Club, as well as Sully's. Cynthia Boisvert noted the desirability of working with the Church before making any proposal. Mike Lawler asked whether we should return to the Selectmen and say that we're likely to need more time, or to make only preliminary findings. Carl Quiram noted that the Selectmen were not looking for a final design, but only what should we be budgeting for in 2009. Meaning that if this is the concept to pursue, the design should be budgeted for 2009. Stephen Griffin suggested that Public Works redo this drawing on the existing base instead of the plan base, thereby more specifically exposing the solution's impacts.

Lowell Von Ruden suggested that we should mention the extension of Summer Street as that would affect this intersection, by allowing its avoidance at a location close enough to be perceived as possible alternate route. Carl Quiram responded, if we were to pursue these various connections, roads and parking connections, could we use public funds. Stephen Griffin responded that we could only for public pieces, public parking, not the private ones. The overall plan was to move toward public parking for its management and use efficiencies. Several examples were then discussed. Carl noted the evening business hour on-street parking at the Trestle and suggested more off-street parking would provide a safer

condition. It was noted that parking and its interconnections was handled for new development through its site plan approval, but that in other cases, there was no lead player implementing the master plan. Lowell von Ruden noted that the public was essential in these cases, which did not go through the Planning Board. Carl Quiram noted that these small physical changes, like parking connections or small lots, might be achieved via a major road project. For example, a contractor needs a work/storage yard, where his preparation of a work site that might be later constructed as a parking area with little additional cost. The most obvious place is around Sully's. Mike Lawler supported any additional parking that might be achieved, noting that Main Street might have time limits encouraging back lot parking. He also noted that any property purchase take several years and is, therefore, not within this project's domain. Stephen Griffin asked, with an offset opposite Summer Street, could you deal with one property, instead of two?

Robbie Grady asked to again consider requiring a right turn only out of High Street, fixing the left turn issue at no cost and no outside impact. Can this be tested? Carl said yes, if it didn't involve repainting or re-striping. Lowell noted that testing something like this takes several months for data collection. Isn't Elm Street the more major problem? In terms of queue and wait time, High Street is worse. Again, it was noted that this pushes the traffic onto Smith and Maple, making the Maple Avenue School situation much worse. Sandy Rowe confirmed that the current one-way pattern for the school is for parents and just for school hours, separating drop-off back up from the bus area.

Next meeting is scheduled for 7:00 AM on 8/18/08

8:05 AM Meeting Adjourned

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: Michael Lawler, John Denoncourt, Cynthia Boisvert, Planning Board representatives Lowell Von Ruden, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, Catherine Przekaza, Selectmen representative Vivian Blondeau, Economic Development Council representative Dan Reidy, Police Chief Patrick Sullivan and Fire Chief Richard O'Brien.

Absent: School Board representative Keith Allard.

Others Present: Sandy Rowe (Goffstown Truck Center, Inc., Safety and Training), and Terri Modesto (Goffstown Truck Center, Inc. Terminal Manager).

7:07 AM: Meeting Called to Order by Stephen Griffin

MINUTES

August 11, 2008

Chief Sullivan moved to accept these minutes as written, Chief O'Brien seconded, vote 9-0-2, with Vivian Blondeau and Dan Reidy abstaining. Motion passed.

HANDOUTS

Stephen Griffin provided handouts, as previously requested, of the Main/Elm/High/North Mast Street intersection that had been discussed at the August 11th meeting, but on a base map of existing conditions, in lieu of the Master Plan map as a base. One map shows property lines and the second does not.

MAIN/ELM/HIGH/NORTH MAST INTERSECTION

This intersection was further discussed. Robbie Grady noted that these new map handouts were incorrect in one detail. The House, map 34, lot 106 has driveways on both sides. The one next to the church leads to the backyard and the other in the form of an alley, allows one occupant parking. There is also a driveway to the south of Map 34, lot 105 to its parking lot.

Michael Lawler noted the need to clearly deal with the option of a roundabout at Main and Elm Streets, which required the taking of public, rather than private, property. Stephen Griffin and Robbie Grady recalled last week's discussion points on this alternative that lead to its rejection, including the alternative of a roundabout between Elm and High Streets. This former alternative would wipe out the public open space, and would probably not function well due to its distance from High Street, the more significant problem intersection. This latter alternative, on the other hand, while being more effective as a traffic control device, would cause an even greater impact on private property, requiring the removal of buildings, as well as yard areas. Stephen Griffin concurred with Michael Lawler, as did the Committee, that the final report should deal clearly with this alternative.

There was also further discussion of a High Street right-turn-only option by Vivian Blondeau, as being a potentially less expensive solution. Specifically, she was referring to both the one-way circle alternative utilizing other local streets, and/or the right-turn only out of High Street. Robbie Grady recalled that the right-turn only would force more vehicles through Smith Street and Maple Avenue, increasing the bus, car, pedestrian conflict problems at Maple Avenue School. Chief Sullivan noted the recent Board of Selectmen's new ordinance to try a one-way pattern for school parents during the new school year to address these school problems, and was concerned that with the allowed school parking/waiting on Maple Avenue, lanes would be narrowed and additional through traffic would be an additional, undesirable conflict. Stephen Griffin recalled that Carl Quiram's concerns had not been just the cost of stripping and

signs, but both the user's learning curve and the potential secondary impacts on the school. In response to Cathy Przekaza's question,

Elm Street would have only a right turn into the roundabout, and alternate 2B allowed North Mast traffic to turn on to Elm Street. Relative to forcing Elm Street traffic to exit to the right, Stephen Griffin noted that these solutions had not been fully designed, but that not only would Elm Street not have its current left-turn slot, but there might also be an island barrier.

PLEASANT STREET/MAST ROAD INTERSECTION

The Committee next addressed the McFarland-Johnson drawings for this intersection. Dan Reidy asked for clarification relative to Carr Court. Chief Sullivan noted that there was a through right-of-way, but that Carr Court was not currently paved or utilized as a through street. Stephen Griffin noted that if such were allowed, it would be very detrimental to the adjacent homes due to the very tight dimensions. Dan Reidy concurred, and only suggested that the drawing be clear on this point.

Cynthia Boisvert noted that this intersection, compared to the others, had sufficient existing right-of-way. The exit from East Union Street was again discussed. Stephen Griffin noted that the signalized option had a painted no left turn, which would negatively affect school busses, and the roundabout option left the busses with their current situation.

Cynthia Boisvert discussed the existing crosswalk at East Union Street and the poor sight distance when approaching from the north. Chief O'Brien noted this would be resolved by having a crosswalk only at the roundabout. Chief Sullivan noted that this might require the hiring of another school crossing guard. Cathy Przekaza noted the heavy Sunday demand for Church pedestrian traffic, making the crosswalk's relocation undesirable.

Vivian Blondeau asked how many buses coming out of East Union would be stopped by traffic backup trying to get through the roundabout? Sandy Rowe discussed Maple Avenue crossing guards' experience, and confirmed that the crossing guards also had training for traffic flow and released only those buses that fit within the queue, and that this was the existing pattern and it seemed to work satisfactorily. Vivian Blondeau noted that there was sometimes a back up through this intersection. Michael Lawler noted that fixing the series of these three intersections would improve this capacity condition. Stephen Griffin noted prior discussion about improving the configuration of the east end of East Union, potentially providing some relief to the bus traffic.

Chief O'Brian noted the pre-emptive possibility, like emergency vehicles have, when using a traffic light intersection. He added that, if you're looking for lower speed, however, then you're looking for the roundabout. Cynthia Boisvert noted that the roundabout slowed the traffic, making it more likely that a driver would be let into the traffic flow. This is also what makes for fewer accidents. This is opposite of this existing condition at this intersection, and that of Wallace Road, where traffic is accelerating to the extent possible as it clears the intersection.

Vivian Blondeau noted that she is in the traffic every morning and usually never goes faster that 20 mph. Speed is not an issue in the morning, only safety. East Union was further discussed. Michael Lawler noted the excessive speed of those utilizing it to by-pass the Pleasant Street intersection.

Lowell Von Ruden asked about the possibility of buses going toward New Boston, utilizing West Union, instead of going left onto Mast and then taking a right onto Pleasant Street. Following discussion of the buses potential of by-passing the Pleasant Street intersection, compared to the poor sight angle at the western end of West Union, and that contrary to appearances, no legal prohibition of this travel pattern

existed, it was the consensus that this option, rather than being recommended, was for the Truck Center Company to weigh and consider.

Michael Lawler asked how is the existing situations different from a roundabout; is it really an improvement? Chief Sullivan noted that the roundabout limited the number of lanes, slowed traffic more consistently, and provided better protection for the crosswalks. Robbie Grady noted that is more out of town traffic than before and the series of islands are found to be confusing, whereas a roundabout presented a more clear traffic pattern configuration. Several Committee members noted that they were aware of drivers being confused by the present pattern of traffic islands.

The Mountain Road was discussed, particularly the difficulty of making a left turn toward the village. Chief Sullivan noted that the roundabout would provide gaps for this maneuver, unlike the existing situation. Cynthia Boisvert noted that with the present situation, a driver wants to accelerate upon leaving Pleasant Street, rather than still being within the circle and being controlled by the splitter island when approaching Mountain Road. Chief O'Brien noted his issue with truck traffic from Mountain Road trying to turn left. Lowell Von Ruden noted that there was not a single turning issue, but that earlier in the morning, it was a totally different pattern. Dan Reidy asked about the Bog Road project that is before the Planning Board. Cathy Przekaza noted that this traffic exited to Pleasant Street, not Mountain Road, and was therefore, the preferred approach direction to this intersection.

Dan Reidy asked if the roundabout might be moved southerly, helping Mountain Road? Robbie Grady noted that this might be too tight. Maybe we should walk out to the site. Stephen Griffin noted that it might move slightly south, but that it still wouldn't get to Mountain Road. The splitter island could could be designed to keep the left turn from happening, but that is not what we want.

Dan Reidy then brought up Factory Street, leading to the Janigan property, map 34, lot 171, which will at some time be developed. How would increased traffic be dealt with? Stephen Griffin noted that the only access points were Factory Street and East Union. Vivian Blondeau concurred that this property would be redeveloped at some point in time. Dan Reidy noted that the natural traffic pattern would be to enter at Factory Street and to exit via East Union. Michael Lawler suggested that any project would depend upon East Union for its exit. Stephen Griffin concurred, except that a right turn would come out Factory Street. This demand, however, to use East Union suggested the requirement to address the road configuration at the eastern end of East Union. There was Committee consensus for this.

Cathy Przekaza wanted to zoom out, looking at a larger roundabout through this whole region. Looking at the area map, this would be to go one-way west on East Union, and returning, one-way east, on Mast Road. Vivian Blondeau noted Keene and its similarity of utilizing a set of blocks to function as the roundabout. It might require a long distance to get to the particular street that one sought. Stephen Griffin noted the issue of the bus center, which would hamper this alternative, and the difficulty of its correction. Cynthia noted how this was like the previous considered Church Street-North Mast circle. Michael Lawler again ask if the High Street and Wallace Road intersections were fixed, would not the existing back up affecting the adjacent intersections have been removed? He explained how the High School traffic backed up to close to the Mountain and Pleasant Street intersections. Then, East Union is also a more viably option.

WALLACE/MAST ROADS INTERSECTION

Stephen Griffin introduced the two McFarland-Johnson alternatives for this intersection and reviewed the required property takings. Cynthia Boisvert noted that the roundabout plan had since been modified, removing one of the "by-pass" right turn lanes up Wallace Road toward the High School, and changing the crosswalks so that the pedestrian crossed Shirley Park and then Mast Road east of the intersection, and

had removed both the Wallace Road and the second Mast Road pedestrian crossings. The residents in this area have requested this modified design. Previously, the through-right-turn-lane not only required the taking of more private property, but essentially bypassed the roundabout and made a dangerous situation for speeding around this corner. Additionally, a roundabout with two lanes was also discussed. This double-lane alternative would defeat its traffic calming purpose, and is inherently more dangerous with the potential of drivers' lane changes.

The Park Lane, to the east of the High School, was also discussed. Cathy Przekaza noted that use of Park Lane is usually caused by persons trying to avoid the school bus jam-up on Wallace Road. Chief Sullivan noted that left turns at Park Lane have resulted in a number of serious accidents. Visibility is terrible for the left turn, and such turns are not, and should not be, allowed. The right turn is OK. The typical vehicle acceleration leaving the Wallace Road intersection was also noted. Cathy Przekaza noted the desirability of the resident's preferred solution of one roundabout lane, as a traffic-calming device, thereby slowing traffic speeds. Stephen Griffin noted that the premises of the Committee, for all intersections, has been to slow down vehicles, improve the level of safety and, while providing for through traffic, not designing to it to the detriment of the community.

Dan Reidy noted the pedestrian traffic pattern from the High School, crossing Wallace Road, and down Lamson Avenue to Barnard Park. In response to inquiry relative to the subdivision recently approved on Worthley Hill Road, it was noted that the Board of Selectmen are currently dealing with this intersection and its crosswalk, and it will be the Board's decision.

Next meeting is scheduled for 7:00 AM on 9/8/08.

8:10 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: Michael Lawler, John Denoncourt, Cynthia Boisvert, Planning Board representatives Lowell Von Ruden, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Public Works Director Carl Quiram, Catherine Przekaza, Selectmen representative Vivian Blondeau, Economic Development Council representative Dan Reidy, Police Chief Patrick Sullivan, Fire Chief Richard O'Brien, and School Board representative Keith Allard.

Absent: None.

Others Present: None.

7:00 AM: Meeting Called to Order by Stephen Griffin

HANDOUTS
Stephen Griffin provided large maps for discussion, both the Planning Board's (PB) proposal and the existing street configuration.

MAIN STREET
Stephen Griffin opened the meeting by describing the two handouts. One is the large drawing of the PB's proposal. It shows that some of the parking spaces would be removed in order to have no-parking where state law prohibits parking, relative to intersections and cross-walks. This plan shows 30 parking spaces, not counting the potential future spaces in front of the existing gas station or the removed spaces.

The second large plan shows the existing configuration, with some of the parking spaces shown as to be removed in order to have no-parking where state law prohibits parking relative to intersections and cross-walks. This plan shows 22 parking spaces remaining.

The other primary difference in approach between these two plans is the traffic calming approach of the PB's proposed plan. It utilizes angled parking on opposite of the street in its different sections, and therefore, does not provide a "straight-shot" down Main Street. Main Street is not wide enough to park on both sides. In summary, to talk about pros and cons of the various solutions, one returns to the primary concerns of Main Street Program which is to have the maximum number of parking spaces and to utilize traffic calming techniques for both traffic control and pedestrian safety and comfort.

Lowell Von Ruden brought up the issue of lost parking spaces in the area of the Common when one superimposed the intersection solution on the Main Street solution. It was noted by Carl Quiram that, while we were still dealing with a conceptual roundabout, not a fully engineered design, there might be a loss in parking spaces from the roundabout's splitter island design. It was noted, however, that the roundabout's impact on parking spaces would be the same with any of the Main Street design solutions. Michael Lawler inquired relative to the planned roadway location within the Main Street right-of-way meeting a roundabout and its splitter island. Carl Quiram thought there was sufficient space for this purpose, providing for the needed jog, not a straight shot through the side of the circle.

Dan Reidy noted that in the PB's proposal, the sidewalk extensions, or bump-outs, were sufficient to dress up Main Street with street trees, a positive impact. Lowell Von Ruden noted that another advantage of the PB's proposal was that the diagonal parking allowed one to both park and un-park more quickly than did parallel parking. This would help flow in a traffic-calmed manner. The other problem with parallel parking is that when one stops to park, the following car may pull up to closely. Vivian Blondeau noted that experience in Manchester showed these opinions to be true, but that the Manchester problem

was that there were two moving lanes, where the second lane driver appeared to assume that he would have no parking interference and could continue at a faster speed without caution, while the right land driver would be inclined to swing out into the second lane to avoid a parking car. Cynthia Boisvert noted that diagonal parking was also a better traffic-calming device than parallel parking in that one drove more slowly while looking for the narrower space. Chief Sullivan also noted that this solution was desirable for the safety of slower speeds, for the driver to not "see" Main Street as a straight shot.

As an alternative to consider, Carl Quiram noted that last year when he had a traffic engineer look at Main Street for budgeting purposes, the engineer suggested that a center island for landscaping might be a desirable solution. Stephen Griffin noted that if one looked at the existing situation and removed the parallel parking from one side, there would be sufficient width for a landscaped island. The result relative to parking, however, would be approximately half of those now existing, or only 10 spaces. This would, therefore, be an undesirable solution, given the need for parking in the village business district. Dan Reidy concurred, noting how people want to park as close as possible to their destinations.

Dan Reidy inquired about crosswalks in the PB proposal. Robbie Grady noted that they had been moved from existing locations, but that the Mill/Depot Street crosswalk should remain, both for a natural crossing point, as well as for festival planning. Carl Quiram reported that currently there are three painted crosswalks. The PB proposal shows four. It was noted that crosswalks, with curb bump-outs, were also traffic calming and assisted safety, reducing the street crossing distance and making the crossing more visible to the motorist. Cynthia Boisvert noted that a crosswalk length with bump-outs was about 22 feet, half of the existing situation. Carl Quiram noted a device of LED lights on a crosswalk yield sign, activated by the pedestrian. Chief O'Brien noted how well LED lights worked at the Pinardville Station, compared to just a blinking light. In response to Cynthia Boisvert, Carl Quiram noted that this sign would be on the bump-out and would not cause to loss of a parking space. He also reported seeing LED lights that would actually light the crosswalk. Robbie Grady noted that this same idea had been used in Britain, with a globe light at the crosswalk, activated by the pedestrian.

Catherine Przekaza concurred with angled parking but asked whether there might be a little wider roadway, as a forgiveness factor. Carl Quiram noted that his experience was the opposite, that the swerving was more dangerous, and that it was desirable to not give this flexibility. Additionally, extra space could probably not be found. Stephen Griffin also noted, that if there were an extra foot or two of space that it ought to be applied to wider sidewalks. It might be desirable to have sidewalks twice as wide, but that would cost parking, so should not be done. Cynthia Boisvert noted that extra width, if available, might also allow for a bike lane. Dan Reidy noted that another problem of too much road width is the driver's temptation to swing wide, to park on the opposite side of the road. This maneuver is also prevented by 60 degree angled, in lieu of right-angle, parking. There was then general discussion of examples of where one would likely park to go to various businesses. This included parking in various public and private lots, both being desirable. Stephen Griffin noted that the PB's proposal attempted to alternate which side had the parking in a fair manner and where it was more needed, given off-street alternatives. In response, Cynthia Boisvert noted that all village destinations were within easy walking distance.

Lowell Von Ruden again noted that the Mill/Depot Street crosswalk was needed, as pedestrians would cross at this location, with or without, a crosswalk. The Committee concurred. There was also discussion as to which side of the intersection was preferred, with the north side, furthest from the bridge, being considered the most safe based on sight distances.

There was then discussion of what was happening across the river, which the PB proposal does not now address. Stephen Griffin suggested that the Main Street treatment of angled parking on alternate sides of

the road, bump-outs and crosswalks, should continue up South Mast to the Pleasant/South Mast Streets roundabout. Dan Reidy noted that this treatment would provide the desired consistent approach to properties on both sides of the river, and would provide maximum extra parking for the church, as well as traffic calming for the otherwise down-hill run to the bridge.

Catherine Przekaza raised the issue of maintenance costs with this design. Carl Quiram, who did not have a specific dollar figure available, noted that the cost difference to plow this configuration was greater to some degree, but that this was desirable as a public purpose improvement. He also noted that their experience with the current bump-outs, and with the Grasmere roundabout, were not the problems which had been previously anticipated. He also noted that the engineered curbing design would be done in a manner that made maintenance as easy as possible for plowing. Likewise, in response to Michael Lawler's question, snow would have to be removed with any design alternative, as there was no storage space.

In response to Lowell Von Ruden's question, Carl Quiram noted that he was still considering the raised platform for crosswalks. He noted Saint Anselm's speed bumps, which are plowed successfully, and the needed balance of public safety with increased costs.

Stephen Griffin brought up the question of street-tree choice. Following discussion of invasive species, tree cutting for utility wires, the appropriate planting space for tree survival and degrees of urban pollution tolerance, it was the Committee's consensus that Cynthia Boisvert would provide a short list of suitable trees, both shade and decorative. Shorter, decorative trees should be utilized where there is overhead wiring, and shade trees where there is none, and there should be clusters of like-type trees. It was also noted that in cases like the Congregational Church, there might be an opportunity for shade trees behind the right-of-way.

Carl Quiram then brought up maintenance, specifically avoiding those trees with the most significant fall leaf dropping issue. Additionally, with these improvements, there will be the ongoing need for keeping the area clean, trash collection, and street and sidewalk sweeping, requiring a commitment, whether or not the businesses are paying extra.

OTHER ISSUES

Vivian Blondeau then noted that the other selectmen have been inquiring, in addition to aesthetics, as to what have we done for traffic flow. Dan Reidy responded that this had been discussed and that the Committee's consensus was that traffic should be accommodated, but not to the detriment of the village, and that in response, the Committee was recommending roundabouts and traffic calming alternatives, which together assist the continuity of traffic flow, allowing vehicle left turns and entry into the flow, but at the same time, in a safe and pedestrian friendly manner. The parking choice, likewise, was designed to minimize flow interference. It does not add capacity with new lanes, but this is physically not possible.

Catherine Przekaza raised the issue of priority of roundabouts, based on accident data. Robbie Grady suggested the importance of going out into the field to envision these proposals, not just depending on drawings. Stephen Griffin also noted the need to adjust the schedule so that the committee might review its report, hence the last meeting will be for this purpose. Cynthia Boisvert then noted the Wallace/Mast Road roundabout abutter's acceptance because of Carl Quiram's meeting with affected property owners before the proposal went forward. This should also be done in this situation. Carl Quiram will make these contacts. He also noted that before we set any one priority, we now need to lay out all the improvements and their schedule.

Vivian Blondeau, Cynthia Boisvert, John Denoncourt and Carl Quiram all discussed various roundabout/traffic circle situations that they had recently experienced, and the problems in maneuvering through circles with double travel lanes or where the traffic was not required to sufficiently slow down.

Dan Reidy and others discussed making Park Street a right turn only and moving the 40 mph further from Park Street, as well as different traffic patterns for the High School. Chief Sullivan noted past accidents and the desirable of this right turn only, no matter what the vehicle back up. Keith Allard noted the use of temporary speed bumps to insure slowing traffic speeds where pedestrians were present. Carl Quiram noted the change process for State roads. Dan Reidy, Lowell Von Ruden and others discussed how the rail trail might change the dynamic of the Wallace/South mast intersection.

Dan Reidy returned to the issue of Main Street and noted that if the goal was to have people spend some time in the village, then not only was the tree needed, but so were the park benches and other pedestrian elements. Chief Sullivan noted the need, because of recent court rulings, to have "non-sleeping" benches, and Stephen Griffin noted that was why he had earlier proposed short benches. There was then further discussion of trees, and Vivian Blondeau noted that she had seen more use of brick or cobble in crosswalks, more expensive to install, but less expensive to maintain. Cynthia Boisvert mention having seen electrically heated crosswalks in Colorado and Carl Quiram noted the same, but with steam, in Littleton.

MINUTES

August 18, 2008

Michael Lawler corrected the spelling of "striping" at the bottom of the first page. Lowell Von Ruden moved to accept these minutes as corrected, Vivian Blondeau seconded, vote 13-0-0. Motion passed.

Next meeting is scheduled for 7:00 AM on 9/22/08.

8:04 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: John Denoncourt, Planning Board representatives Lowell Von Ruden, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Catherine Przekaza, Selectmen representative Vivian Blondeau, Economic Development Council representative Dan Reidy, Fire Chief Richard O'Brien and School Board representative Keith Allard.

Absent: Michael Lawler, Cynthia Boisvert, Public Works Director Carl Quiram and Police Chief Patrick Sullivan.

Others Present: None.

7:05 AM: Meeting Called to Order by Stephen Griffin

MINUTES

September 8, 2008

Catherine Przekaza corrected Other Issues to read that the Committee was at this time recommending traffic calming alternatives, but had not found consensus on roundabouts, and that she had suggested reviewing the priority of roundabouts based on traffic studies, as well as accident data. John Denoncourt moved to accept these minutes as corrected, Dan Reidy seconded, vote 9-0-0. Motion passed.

HANDOUTS

Stephen Griffin provided a partial draft report, dated 9/15/08 and an agenda list of remaining discussion items. He noted that the Committee's schedule allowed for this meeting and one more. He had, therefore, provided a partial draft which would be edited at the next meeting and which also contained some of today's topics, written with some assumptions for review, but which could obviously be altered by the Committee.

NORTH MAST STREET

Stephen Griffin began by pointing to page 6 in the draft, noting that the North Mast Street right-of-way was 60', wide compared to other streets. Currently, except for curbing, this street is two-lanes wide, with parallel parking, a planting strip and a sidewalk on each side. The two desired principals for this street are (1) to be tree a lined street, and (2) to utilize traffic calming, to slow traffic on this long straight stretch, at the same time making one feel that the village continues to the cemetery. Traffic calming might be achieved by removing parking on one side, widening the landscaped area and alternating the side of the street that had the parking. The exception would be the first block, going from High Street, which is generally commercial and where you would not want to loose any parking. Otherwise, there is the potential for on-site parking, as land uses change, further up the street.

Dan Reidy noted that if someone wanted to stop for any destination, their walk would be no more than a block. In response to Vivian Blondeau, Dan Reidy also discussed his business and how parking in this first block was important, as well as the customer's feel that a business on North Mast was still located within the village.

Stephen Griffin noted that he had shown parking as parallel. Dan Reidy noted that he has misunderstood. He thought, and would suggest that this parking should be angled, like on Main Street, not parallel, so that the sense of the Village continued all the way to the cemetery. Lowell Von Ruden concurred. Stephen Griffin noted that with a 60-foot width, this could be done, though it might limit the landscaped area to 4 feet on each side. Catherine Przekaza concurred, and listed the series of business located on

North Mast. She also noted that within the angled parking, there would be bump-outs and crosswalks at least every block.

As a potential edit, Lowell Von Ruden suggested that a cross-section drawing also be provided for Main Street.

Dan Reidy noted that, most importantly, was the slowing-down the traffic speeds on North Mast, as pedestrian street crossing was now very dangerous. The only existing cross-walk is at the western end of Sully's.

CHURCH STREET

Stephen Griffin then introduced Church Street. He began by pointing to page 16 in the draft, noting that the right-of-way was 40', narrow compared to other streets. Currently, except for curbing, this street is two-lanes wide, with a planting strip and a sidewalk on each side. Its current use, however, includes a significant amount of parking on the landscaped strip. It is, therefore, evident that on-street parking is needed. He suggested that Church Street should have, therefore, parallel parking on one side, and sidewalks on both sides, and that for landscaping, one would be depending upon the use of private property. Traffic calming, to slow traffic on this long straight stretch, would be to alter the side of the street that had the parking.

It was also noted that in the first two blocks from Main Street, there might be an opportunity to gain some angled parking by utilizing easements on private property. This would be taking an opportunity to be encouraged, if presented when the road is being engineered. Robbie Grady noted that while this was desirable, it should not be at the expense of the sidewalk, which should be on both sides. Stephen Griffin summarized that Church Street should have sidewalks on both sides and additional angled parking should be encouraged where possible. Catherine Przekaza noted that the design process should involve the property owners for buy-in, as well as consistency of design.

DESIGN DETAILS

Catherine Przekaza noted that, on North Mast, where there should be some type of landscaping, like shrubbery, to limit car light impacts where there was angled parking in front of residents. She agreed that this should be for any street where there was residential.

Catherine Przekaza inquired whether this plan would cover specific curb cuts at Sully's? Stephen Griffin noted that at Sully's there might be unique opportunities, like angled parking with the sidewalk and landscaping between it and the building. There would not, therefore, be a specific picture in this report, but depending on the property owner and the engineering, parking would be maximized and the business access promoted, not harmed. John Denoncourt concurred, agreeing that these opportunities needed to be worked out when the road was engineered. Robbie Grady noted that this same situation occurred at 9 and 11 North Mast, where they currently have cars just pull in at the front of the buildings.

Stephen Griffin next noted East Union and Factory Street, as well as the eastern end of East Union Street, and the suggestions that were in the draft. Both intersections should be re-aligned. Robbie Grady noted that both were very important.

In response to the question as to where Main Street ended and South Mast began, Catherine Przekaza inquired about changing street names so Main Street might be the one name through the Village. Stephen Griffin suggested that that question was for another committee.

Stephen Griffin next noted that tree locations in the draft report called for coordination with the Main Street Program. He also noted that the tree list would also be included.

Stephen Griffin next noted that overhead utilities were mentioned and that placing them underground would be extremely expensive. He questioned the value of relocating them as we wanted building to have fronts on both sides. Chief O'Brien noted Derry and the benefits of relocating these utilities, upgrading and cleaning up the wiring. Robbie Grady noted that the Main Street side was important as the front for the entire community, and that the utility poles added confusion to the design and limited what might be done on Main Street, and therefore, should be relocated. Lowell Von Ruden noted the whole right-of-way layout flexibility that would be achieved be relocating the utilities. There was further discussion on placing the utilities underground, the high cost and the utility company's dislike of underground utilities for various reasons. Robbie Grady referenced the prior estimated cost of $600/ linear foot for underground utilities.

Gateway signs were next discussed. The question was where should the entry the village signs be located? There was general discussion of various options, including Pleasant Street, Wallace Road, Normand Road, and the urban compact limit. The committee discussed the Corridor Study, the perception of what is urban, what is the limit of commercial, how far would one walk, and what was the appropriateness of a particular sign's site. The Committee's consensus was that this end of the village should be the urban compact line. It was noted that there was space at this location, at the rail trail in front of the Park and Recreation building, extra space that allowed for a sign and/or stonewall and monument. Robbie Grady also noted that when this was done, all of the other welcoming signs should be cleaned up, i.e. updated and removed or consolidated.

The next item discussed was pedestrian lighting and street lighting. Robbie Grady noted we might match the lighting that existed in the park, or that existing on the bridge. Catherine Przekaza noted the "dark sky's initiative", and that those on the bridge would not be recommended. Lowell Von Ruden noted the modern "classic" alternatives, which were fill cut-off fixtures, like those at the new Ace hardware store. Following further discussion, it was the committee's consensus that the report should recommend (1) pedestrian scaled light fixtures, (2) full cut-off fixtures, and (3) which looked like the park and Ace Hardware Store light fixtures. Additionally, they should be environmentally sensitive by type bulb and type of controls.

Robbie Grady noted that the Main Street's Design Team is looking at their banner needs, so the opportunity for banners is desirable. Additionally, they are proponents for unique street signs for each of Goffstown's villages. Sidewalk standards were also broached. Main Street Program recommends the concrete sidewalk with brick edging and granite curbing on Main Street. Stephen Griffin brought up the other streets, Church, North and South Mast Streets, where to balance initial construction and maintenance costs, there was not yet a consensus on construction material.

Chief O'Brien again brought up the impact on public safety vehicles and that roundabouts potentially slowed emergency response vehicles because of driver's unfamiliarity with roundabouts, and that it needed to be mentioned so that the Board of Selectmen might be making an educated decision when it addressed the issue.

Vivian Blondeau brought up the maintenance impact of these improvements. She noted the need to present necessity list, not a wish list. Stephen Griffin noted that Carl Quiram had earlier stated the ongoing maintenance issue, and that one method to deal with it was to utilize an improvement district, which would have all property owners participating in the increased costs of maintenance. He then described this legislation and where it was currently utilized.

Catherine Przekaza cautioned about doing more than one roundabout at a time, to see that it was working and that people knew how to negotiate it and allow for emergency vehicles, and studying its affect before moving on. This documents has the potential of being used by a public works, the selectmen or developers to say the Committee wants three roundabouts, and that may not be the best thing for our town. To put out a document that wholeheartedly endorses these is premature. We need to be careful how we word this document.

Stephen Griffin then noted that these three intersections are linked to each other, and that delays at one will back up and negatively affect another. They are close enough to each other that they are related. A problem at Pleasant Street causes a problem at High Street. This suggests that, whatever solution is appropriate for each intersection, and outside of the budget question, all intersections should be done at the same time.

Robbie Grady noted that in looking how we pay for all this, we need to remember that when you have a physically attractive, accessible and safe downtown, it invites more business, which in turn, expands the commercial tax base. The correct time to do street improvements is when businesses are beginning to improve themselves. We are there now; we see business improvements throughout Main Street.

Stephen Griffin noted the draft budget insertion and his desire that Carl Quiram make some statement about it. He also asked Robbie Grady for any pictures she might have of desired Main Street details, poles and lights.

Dan Reidy noted that it was desirable to have a consensus on this report and not a split opinion. He inquired as to flexibility in the Board of Selectmen's deadline. Vivian Blondeau noted that the Committee might have a week or so more. She would mention it to the Board this evening.

Next meeting is scheduled for 7:00 AM on 9/22/08, and <u>will be a two-hour meeting allowing time to review proposals on-site and to edit a report.</u>

8:15 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: John Denoncourt, Planning Board Alternate representatives Jim Raymond, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Catherine Przekaza, Selectmen representative Vivian Blondeau, Economic Development Council representative Dan Reidy, Fire Chief Richard O'Brien, Cynthia Boisvert, Public Works Director Carl Quiram and Police Chief Patrick Sullivan.

Absent: Michael Lawler and School Board representative Keith Allard.

Others Present: None.

7:05 AM: Meeting Called to Order by Stephen Griffin

The committee walked to the Main/High/Elm/North Mast intersection to visualize the potential impact on abutting property owners for the various intersection solutions that were being discussed.

7:45 AM: The Committee returned to its meeting.

MINUTES

September 15, 2008

Vivian Blondeau moved to accept these minutes as written, Robbie Grady seconded, vote 8-0-3, with Chief Sullivan, Jim Raymond and Cynthia Boisvert abstaining. Motion passed.

Stephen Griffin noted that the Board of Selectmen had agreed that this Committee might have two more weeks to complete its deliberations, and that the purpose of this meeting was to determine where there was consensus and where more discussion was needed, so that consensus might be achieved within the allowable time.

Stephen Griffin continued down the list of report items determining where consensus existed. Consensus has been achieved on the following draft concepts:

1. The primary goal is safety for both vehicles and pedestrians.
2. Master Plan objective of allowing through commuter traffic, but not in a way to be detrimental to the Village, and generally to utilize traffic calming techniques to slow traffic, and thereby providing for pedestrian safety and comfort.
3. Overall Village Character
4. North Mast Street
5. Main Street
6. Church Street
7. Both Ends of East Union Street at its intersections, and a right-turn only out of Park Lane.
8. Wallace Road/South Mast Street Intersection as has been modified with the abutters.
9. Pleasant/South Mast Streets Intersection with the note that Mountain Road should have right and left turn slots as it meets South Mast and that South Mast might be adjusted so the right turn onto Mountain was not just a gradual curve, but a right-turn.

There was discussion but there is not consensus on the following:

1. South Mast Street
   Following a description of the proposed design, discussion related to (a) minimizing the impact of changing existing front yards within the right-of-way, (b) the availability of off-street parking as opposed to on-street, (c) the current weekend parking demand on the road's shoulder, (d) passing vehicles stopped for left-turns, or emergency vehicles, with a curbed road, (e) sidewalks on one or

both sides, (f) curbs on one or both sides (g) using painted edge lines to slow cars, (h) the addition of a bike path, (i) truck and emergency vehicle widths, and (j) narrowing South Mast Road with bump-outs at crosswalks, but without narrowing the remainder of the road.

2. Main/High/Elm/North Mast Streets Intersection
   Following a description of the proposed design, discussion related to (a) what solution causes the least possible impact, as the visual impact of a roundabout on the library, the Lion's popcorn stand and St. Matthews would be significant, (b) is there an alternate to the roundabout that works, (c) what is required for just for pedestrian safety, (d) constructing a roundabout at the western end of North Mast, or elsewhere along North Mast, like White Street, thereby creating traffic gaps, which would solve the gap-need at High Street, (e) delay of this roundabout's construction, (f) lights vs. roundabouts, (g) one-way circle throughout the village, (i) engineering detail impacts, (h) no-build alternative, and (i) alternative traffic flow into Sullys.

Catherine Przekaza brought up the priority issues, but it was not concluded.

Carl Quiram reminded the Committee that all of these proposals are conceptual and have not been engineered. The design-engineering phase of any alternative will be base on a survey, and will offer the opportunity to address many of the impact issues.

Robbie Grady noted that this report and its recommended solutions dealt only with the exiting road and its intersection and was only one part of a many part solution. She noted that other parts included, but were not limited to, an educational effort for use of roundabouts, extension of park & ride opportunities to Weare, a rail trail bridge over the Piscataquog so that it led to Maple Avenue School, encouragement for employee parking at the least utilized parking locations, utilization of the federal Safe Routes to School program, encouragement of fewer car drop-offs at elementary schools and encouragement of 2-person car pooling to the high school.

In response to questions about the one-way circle in the village, Jim Raymond noted that when the Planning Board developed the Village Plan, this was addressed. The Board thought that this was too big a change. It diverting traffic onto a residential street making it a commercial thoroughfare, and the Board did not desire to greatly change peoples' expectation about their neighborhoods. And lastly, that it did not solve the traffic problem. Carl Quiram concurred that the one-way circle would just move the problem to Depot Street.

For next meeting, September 29th:

- ❑ Stephen Griffin will write position statement on lights vs. roundabouts
- ❑ Carl Quiram will present North Mast improvements and the resulting minimal Main/High/Elm/North Mast improvements.
- ❑ Carl Quiram will present South Mast alternatives.
- ❑ Carl Quiram will seek the DOT drawing for its traffic light option.

The final meeting, October 6th will be to review the final report. The Board of Selectmen presentation should be October 13th.
The next meeting is scheduled for 7:00 AM on 9/29/08.

8:50 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin *Subject to committee approval.*

PRESENT: John Denoncourt, Planning Board representatives Lowell Von Ruden, Planning Board alternate representatives Jim Raymond, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Catherine Przekaza, Selectmen representative Vivian Blondeau, Fire Chief Richard O'Brien, Michael Lawler, Cynthia Boisvert, Public Works Director Carl Quiram and Police Chief Patrick Sullivan.

Absent: School Board representative Keith Allard and Economic Development Council representative Dan Reidy.

Others Present: None.

7:05 AM: Meeting Called to Order by Stephen Griffin

MINUTES

September 22, 2008

Pat Sullivan moved to accept these minutes as written, Cynthia Boisvert seconded, vote 10-0-1, with Lowell Von Ruden abstaining. Motion passed. (Vivian Blondeau arrived after this vote.)

HANDOUTS

Stephen Griffin provided a revised "Consensus Issue: Roundabout vs. Signalized Intersection" with attachments, an aerial view and proposed cross-sections for South Mast Street, a drawing of a relocated roundabout for the Main/High/Elm/North Mast Streets intersection and two drawings of alternate traffic island treatment for the same intersection.

CONSENSUS ISSUE

Stephen Griffin opened the discussion on the "Consensus Issue: Roundabout vs. Signalized Intersection", noting that the three new attachments, one relative to roundabouts in general, one about test undertaken relative to emergency vehicles and one being a public information example used to instruct drivers how to drive in roundabouts.

Michael Lawler noted that the reference of the roundabout requiring less real estate should be clearly stated that this equated to less need for the taking of private property.

Carl Quiram noted that the emergency vehicle testing included potential harm to fire trucks from speed bumps, or other high vertical bumps. Discussion clarified that in terms of cross-walks, it was the degree of rise above the pavement. It was the Committee's consensus that its proposed crosswalk was to be only a small, non-abrupt rise of a textured area to a smooth crosswalk, followed by another textured area. This would make a tactile, visual, audio marked crosswalk which was not to be a speed bump. This configuration was called a "speed table" in the tests, and was found to cause the least emergency vehicle delay and to not cause truck damage. This distinction will be clarified in the report.

MAIN/HIGH/ELM/NORTH MAST STREETS INTERSECTION

Catherine Przekaza began discussion of this intersection by noting the potential from our last week's site walk of shifting a roundabout a short distance to the ease. The drawing which was provided showed this alternative. It was then clear that the physical and visual impacts to the Episcopal Church would have been the same or worse with this alternative.

Stephen Griffin then introduced the two "island" drawing noting that the question was that if all the planned traffic calming items were done approaching this intersection, would crosswalks and

median islands be sufficient to improve the intersection for traffic, resulting in gaps in the traffic flow. He then described these drawings.

Chief O'Brien noted that his trucks had use of the opticom system at Church and Main Streets so that he could stop traffic for his entering onto Main Street. Jim Raymond asked if this might be used at other intersections, like this one, to assist the fire truck which still allowing the desired planning solution for vehicle and pedestrian safety? Would this not be a way to meet the infrequent emergency situation, while avoiding a full signalized intersection? Carl Quiram estimated that the cost for a single light was approximately $5,000. It was the Committee's consensus that this was a reasonable and desirable addition for this and the other roundabout solution intersections, i.e. those at Pleasant Street and Wallace Road. Chief O'Brien noted that the need for opticon signal heads would be only at the two busiest entries of a roundabout.

Carl Quiram reflected on an earlier suggestion that a roundabout might be desirable to slow traffic as one approached the village from the west. He concluded that he believed that North Mast Street was long enough that such any traffic breaks created at the cemetery end of North Mast would be lost by the time the vehicle got to High Street. Stephen Griffin noted that the proposed bump-outs and alternating sides for parking would have been more effective for this purpose.

The "traffic dummy" was also discussed. Carl Quiram noted that these would just be hit, based on his experience with crosswalk markers in the middle of the street. They just became "targets" for truckers.

Cynthia recommended that the parking proposal at Sullys should be altered to avoid backing into North Mast Street. If there was only angled parking and a one-way pattern, the landscape strip could be along the road. This was important so that parking would be effective during the evening rush hour. Carl Quiram noted that these spaces would probably be only for compact cars. Stephen Griffin noted that "compact vehicle" spaces are typically labeled and utilized in garages and other parking lots. Jim Raymond concurred that this was OK, as the whole parking area should not be controlled by large SUV's. Lowell von Ruden and Carl Quiram both noted that the narrowing of the north bound lane was desirable to slow traffic and worked well with this solution. Vivian Blondeau noted that this solution also solved a current parking/utility pole conflict issue. It was a consensus that this change should be made.

Lowell von Ruden noted that on the south side of the street, this issue is not the same because the peak traffic time does not coincide with the regular business hours using this parking.

Jim Raymond noted that this traffic island configuration would be a satisfactory alternative to the roundabout, achieving its desirable ends, with less cost, and less impact, while allowing different plans to be put in place in the future. Michael Lawler noted that the crosswalks would slow traffic which is desirable.

Catherine Przekaza concurred with this traffic island configuration. Also, it provided project phasing, the results of which might be measured. Stephen Griffin noted that this solution required no additional land and, therefore, did not have that cost or that negative impact, and that

the road narrowing and crosswalks should achieve the traffic control objectives about as well as the roundabout option. It was the Committee's consensus that this traffic island configuration solution, as amended, was the most appropriate answerer for this particular intersection.

SOUTH MAST STREET
Stephen Griffin then introduced the materials provided for the South Mast street discussion. He noted that these revised cross-sections assumed that there would be a curb and parking on only one side of the street, and that the other would be surface drainage, with landscaping strips on both sides. This was because of the high cost of the second curb, and the then required associated drainage, for which there would probably not be the required funds. In summary, the area for existing parking on one side would be utilized for two landscaped strips, providing the desired street tree canopy.

The existing parking experience was discussed. In discussing the funeral home's parking, Jim Raymond suggested a solution not be designed for the occasional event at the expense of what was desirable for the community overall, but that these unique situations were handled with added traffic control personnel.

Carl Quiram noted that the whole area was historically designed with surface storm water drainage from the entire hillside, through the backyards and through cross-culverts under South Mast Street. Over time, backyards have been altered and we now have flooding cellars, whose owners want drainage put in at the road. This will be a political issue as to funding. Stephen Griffin asked whether we need to suggest two solutions depending on how the Board of Selectmen decides to respond to the drainage issue? Cynthia Boisvert suggested that DPW should do an overall drainage study, and that at the same time, we have no easements to do anything in the backyards. This issue is not solvable as part of this Committee's study. Jim Raymond noted that we need to suggest two solutions for the Selectmen to choose from. Vivian Blondeau concurred. It was the Committee's consensus that these two solutions should be provided.

OTHER
Stephen inquired as to whether there were any other issues.

Michael Lawler noted that earlier conversation about the right only from Park Street and moving the 40 MPH zone were both desirable and should be included. Following some discussion, Stephen Griffin said that this would be done.

The schedule was then confirmed: that the extra two weeks given included September 29 and October 6. The presentation to the Board of Selectmen would then be at its October 13th meeting, allowing time for any editing that the Committee required.

Catherine Przekaza was concerned about how this report would be used in the planning process. This report comes as essentially a rubber stamp for two roundabouts intersections and a traffic island configured intersection. We haven't qualified the phasing of it or its design criteria. For example NHDOT supplemental criteria for roundabouts talked about the need to have the inside diameter at 125' and we are proposing 111'. There needs to be some language in here saying that this is not a slam dunk for the design.

Stephen Griffin responded that this is not presented as the engineered design, but is a conceptual where we have looked at different ways to treat different intersections, their pros and cons, and the relationship between them. Just like the drainage study which is needed for south Mast, none of it has been engineered. Implementation, engineering and funding, will be as the Selectmen choose to do it. Roads are the Selectmen's issue, not the Planning Board's.

Catherine Przekaza added that we should not lose sight of the importance of this document; we want to make sure that this document has some language in it that we expect that these designs will meet NHDOT standards. Jim Raymond objected that this is not the Committee's role. The design standards should meet the community's needs. We are setting a planning goal and it is up to the Selectmen and the engineers to determine how it's implemented, and if they chose to. Michael Lawler noted this conceptual proposal may change in its design phase or in its budget phase. Carl Quiram noted that this was Route 114, and NHDOT would review his engineering.

Catherine Przekaza brought up the issue of timing various changes. The conclusion of discussion was that the Board of Selectmen will decide how much to do, or not to do, and when to do it. Vivian Blondeau noted that it's important to know what Public Works can tackle before 2011, Goffstown's 250th Birthday, and not to have something half done.

Next meeting is scheduled for 7:00 AM on 10/6/08, to edit/approve the final report.

8:05 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin

Subject to committee approval.

PRESENT: John Denoncourt, Planning Board alternate representatives Jim Raymond, Goffstown Main Street Program representative Robbie Grady, Planning and Economic Development Coordinator Stephen Griffin, Catherine Przekaza, Selectmen representative Vivian Blondeau, Fire Chief Richard O'Brien, Michael Lawler, Cynthia Boisvert, Public Works Director Carl Quiram, Police Chief Patrick Sullivan, School Board representative Keith Allard and Economic Development Council representative Dan Reidy.

Absent: Planning Board representative Lowell Von Ruden.

Others Present: None.

7:05 AM: Meeting Called to Order by Stephen Griffin

MINUTES

September 29, 2008

Vivian Blondeau moved to accept these minutes as written, Patrick Sullivan seconded, vote 13-0-0. Motion passed.

EDITING

The draft report was edited as follows:

1. The executive summary was altered, adding information, rearranging sentences and adding to the conclusions.
2. The membership list was corrected to reflect attendees.
3. The one-way loop discussion was amended.
4. Existing village sidewalk standards were added.
5. The bench description was amended.
6. The budgeting and scheduling table of dollars was checked, and was correct.
7. It was noted that scheduling would be determined by the Board of selectmen.
8. Park Lane discussion was amended.
9. Additional description was added under the no-build alternative.
10. Accident numbers were added.
11. Parking space numbers were added.
12. The opticon system was repeated for each intersection description.
13. The lane width paining was added under South Mast Street, where is had been discussed.
14. Various spellings were corrected throughout the draft.

Engineering standards were discussed, but resulted in no report amendments.

APPROVAL

James Raymond moved to accept the report as amended, Patrick Sullivan seconded, vote 13-0-0. Motion passed unanimously.

This concludes the work of the Board of Selectmen's Village Planning Committee. Stephen Griffin thanked the committee members for their participation.

8:05 AM Meeting Adjourned.

Respectfully submitted,
Stephen Griffin