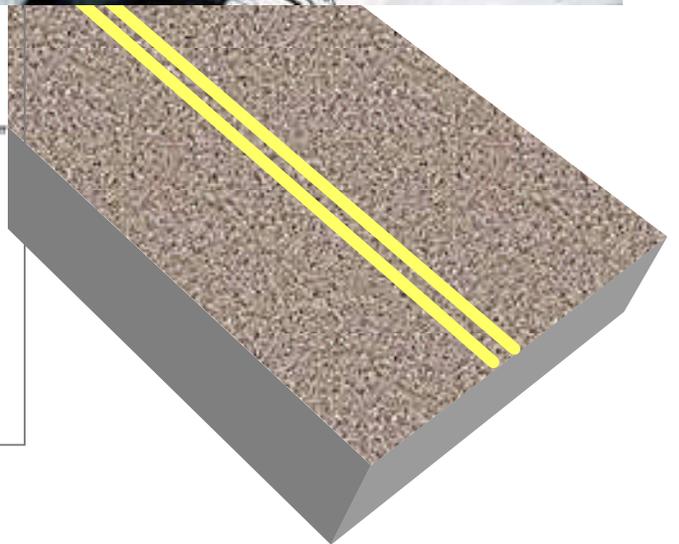
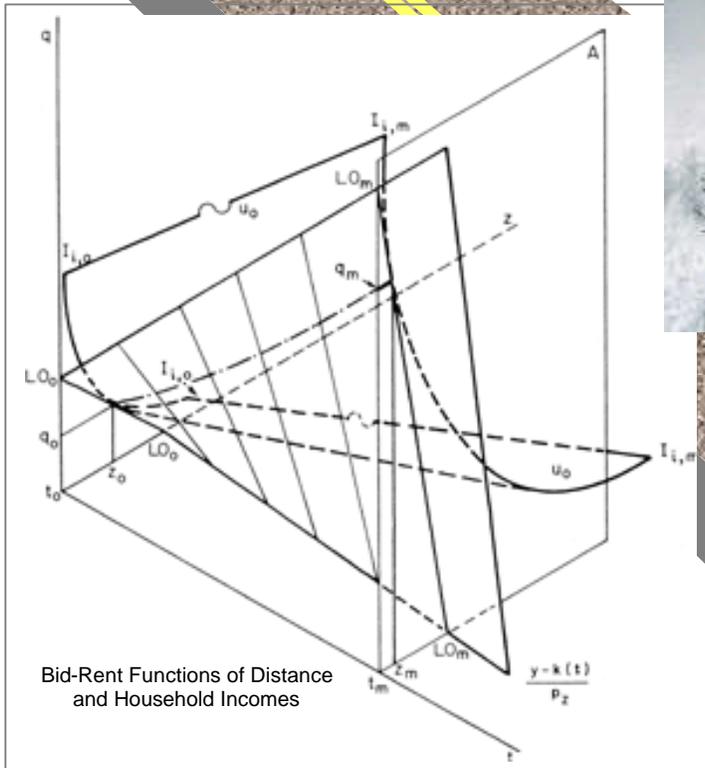
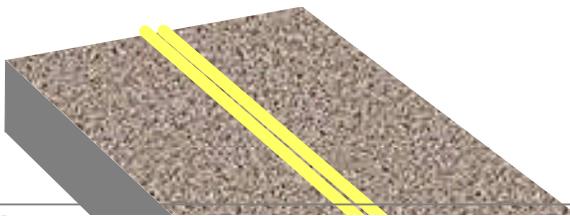


A Report to the Commissioner of the NH Department of Transportation

U.S. 202 Corridor Study

DECEMBER 2002



SWRPC

Southwest Region Planning Commission
20 Central Square, 2nd Floor
Keene, New Hampshire

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PART 1. STUDY DEFINITION

STATEMENT OF PURPOSE

The purposes of the *US 202 Corridor Study* are to develop:

- a schedule of local roadway capacity and safety improvements on US 202;
- recommendations for local land use controls and economic development approaches which are consistent with the protection of highway capacity and public safety (with attention to highway impacts on community life) in the existing US 202 Corridor; and
- a comprehensive strategy shared by state and local decision-makers for the development and use of US 202 between the New Hampshire / Massachusetts state line in Rindge to NH 9 in Hillsborough – a strategy which addresses US 202 as a shared public resource.

The central principal of the Study is the established public purpose for supporting the development of transportation infrastructure: providing safe and efficient access and mobility. The phrase “safe and efficient” includes the social and natural environment of which the infrastructure is a part.

This Report is provided to local officials and citizens for their use in decision and policy making regarding development and US 202. Of particular interest is enhancing public understanding of the relationships among regional development trends, local land use management, the physical landscape, and highway function.

DESCRIPTION OF STUDY AREA AND PROBLEM DEFINITION

US 202 travels through seven northeast states from Delaware to Maine. In New Hampshire, US 202 connects the Contoocook Valley with NH 9 and Interstate Routes 89 and 93, before continuing on to Maine. The 34-mile segment between the Massachusetts/New Hampshire state line in Rindge and NH 9 in Hillsborough has traffic and development characteristics that distinguish it from the remainder of US 202 to the east. The study area comprises land within 1,000 feet of the center line of US 202 between the state line and NH 9 in Hillsborough. The more than 8,000 acres of mostly forested land is punctuated by downtown settings and dispersed residential, agricultural and commercial land use.

US 202 passes through seven towns in this segment and is main street to several of them. While most of this segment is undeveloped forest, US 202 is a regional arterial, conveying passengers and freight to destinations within the Contoocook Valley and beyond.

The mobility provided by US 202 and the other state highways in the region is basic to the quality of life enjoyed by residents and visitors. That mobility has supported continual economic growth and cultural enrichment. However, varied, and in places dangerous highway geometry; growing traffic volumes; close proximity of highway traffic to residential, commercial and public land uses (and unsafe conditions for pedestrians and local traffic); pervasive environmental impacts including noise, road dust, vehicle emissions, and storm water runoff; and constant demand for commercial access to the highway are at the root of concerns about the future of US 202 and the communities it supports.

The need for a regional approach to the many local concerns observed in the study area was identified by the Southwest Region Planning Commission during successive biennial Transportation Improvement Program development cycles. The US 202 Corridor Study was undertaken as a cooperative project among the Southwest Region Planning Commission (SWRPC), the Central New Hampshire Regional Planning Commission (CNHRPC), NH Department of Transportation (NH DOT), and most importantly the seven municipalities that share this reach of US 202: Hillsborough, Antrim, Bennington, Hancock, Peterborough, Jaffrey, and Rindge.

APPROACH

The US 202 Corridor Study was undertaken as a community-based planning study. The Study might be considered the beginning of a management approach for coordinating land and highway development at the local and state levels. As such, professional research was used to establish a credible factual basis for public discussions about the future. The Study uses existing data as well as original data from research specific to the Study. The analyses produced a first-time compilation of previously isolated data sets in a unified Geographic Information System created and managed by SWRPC. The subject areas of research which are included in this Report are:

- Traffic and Roadway Conditions
- Environmental Resources: Natural and Cultural
- Demographic and Economic Conditions
- Land Use and Development Patterns
- Community Plans and Regional Trends
- Possible Future Conditions in Traffic and Development

A second component of the Study is Public Involvement comprising several elements:

- US 202 Corridor Study Advisory Committee;
- Community Surveys;
- Local Officials Workshops; and
- Informal Public Information.

PART 2. FINDINGS

Traffic Volumes

Average Daily Traffic Volumes were calculated for 33 locations in the study area using 7-day hourly automatic traffic recorder counts during the Fall of 2000. Vehicle classification and speed data were collected for US 202 at town lines to establish vehicle mix and travel speed.

Findings:

Traffic volumes peak significantly in Jaffrey and Peterborough and near state highway intersections in Rindge, Hancock and Antrim.

Average Annual Daily Traffic (AADT) trends along US 202:

- Jaffrey AADT ranges from 8,072 at the Rindge town line to a high of 11,607 on Main Street, and back down to 7,408 north of Pierce Crossing Road.
- Peterborough AADT ranges from 6,810 at the Jaffrey TL to a high of 14,787 at the NH 101/US 202 dogleg, to 6,328 at the Hancock TL.
- Rindge AADT peaks at 9,147 vehicles just south of NH 119, Hancock peaks at 6,328 at the Peterborough TL, and Antrim peaks at 8,057 south of NH 31.

Truck traffic volumes are in keeping with the road's classification as "Minor Arterial" and "Major Collector"

- At least 90% of traffic on US 202 is passenger vehicles
- Tractor Trailers account for 2-4% of traffic.

The majority of vehicles recorded by speed were traveling at or near posted speed limits.

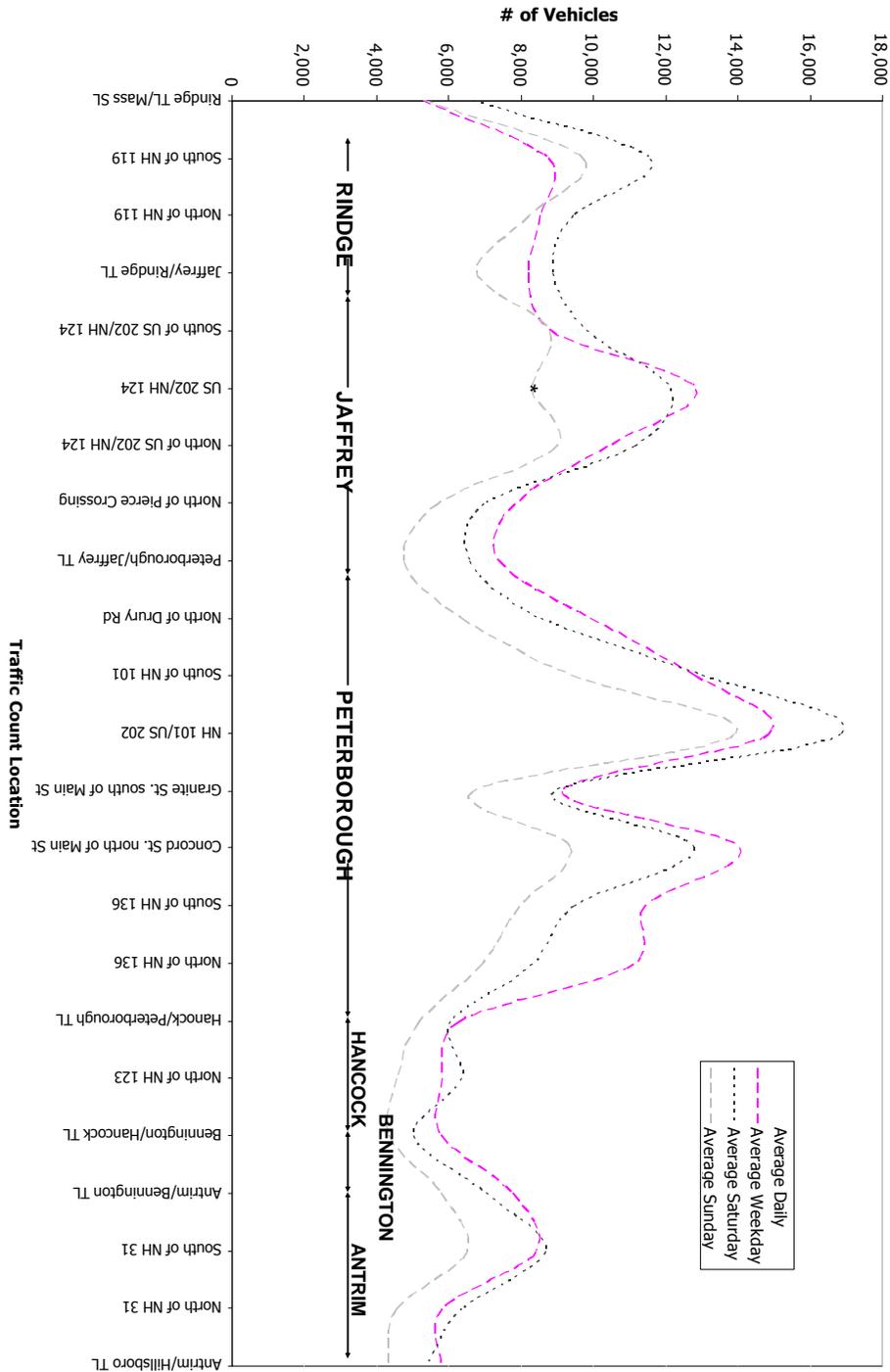
- Vehicles traveling at 55 mph or higher ranged from a low of 7% at the Bennington/Hancock TL to a high of 31% at the Jaffrey/Rindge TL.
- The majority of vehicles (94%) traveling at 55 mph or higher were passenger vehicles.

Increases in traffic volumes have remained relatively stable since 1990.

- Although historic traffic count data is available for a variety of years depending on specific location, the greatest general increases in annual traffic has been in Peterborough, Jaffrey and Rindge.

The chart on the follow page shows US 202 traffic count volumes from Rindge to Hillsborough. The largest peaks in traffic volumes can be seen in Peterborough, Jaffrey, and Rindge.

US 202 Traffic Counts Fall 2002



Intersection Capacity Analysis

Turning movement counts were conducted at 5 signalized intersections and 4 unsignalized intersections along the US 202 Corridor in the months of October 2000 and January and October 2001 during peak travel hours of 6:00-9:00 a.m. and 3:30-6:00 p.m. The turning movement data were used in conducting capacity analyses to determine level of service either for the entire intersection (for signalized intersections) or by approach (for unsignalized intersections). The capacity analyses were conducted using Highway Capacity Software (HCS) 2000.

Findings:

Signalized Intersections

The signalized intersections along the US 202 corridor demonstrate acceptable (i.e. LOS "D" or better) levels of services as shown in the table below and in the graphics on the following pages. Intersection levels of service, based on delay, are calculated for both morning and evening peaks.

Location	Period	Level of Service
US 202 at NH 119, Rindge	A.M. Peak	C
	P.M. Peak	C
US 202 (River St) at US 202/NH 124 (Main St), Jaffrey	A.M. Peak	C
	P.M. Peak	C
US 202/NH 124 (Main St) at US 202 north (Peterborough St), Jaffrey	A.M. Peak	*
	P.M. Peak	*
US 202 at Grove St, Peterborough	A.M. Peak	D
	P.M. Peak	D

* The intersection of US 202/NH 124 (Main St) at US 202 north (Peterborough St) in Jaffrey is a five-leg intersection and cannot be analyzed in SWRPC's current HCS2000 software model.

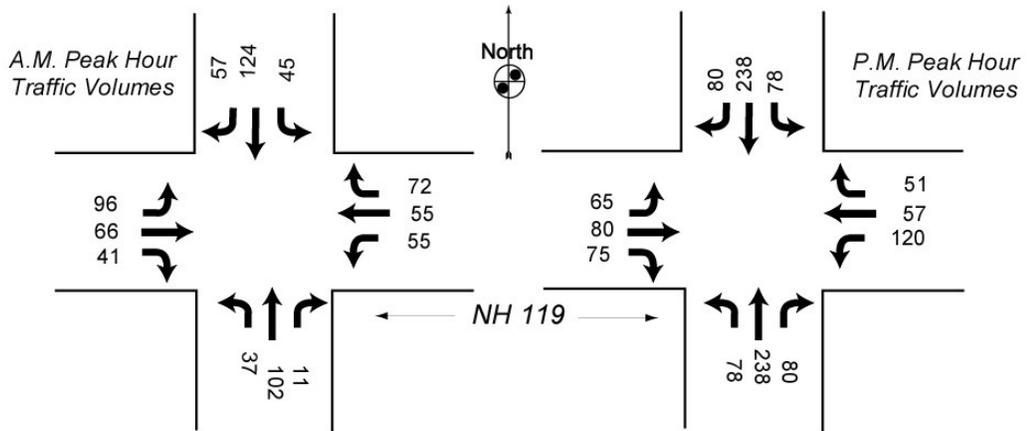
Unsignalized Intersections

The unsignalized intersections along the US 202 corridor demonstrate varying levels of services as shown in the table below and in the graphics on the following pages. Intersection level of service for unsignalized intersections is computed based on total delay and is determined for each approach. For the analyzed intersections below, the US 202/NH 101 and Granite Street intersection in Peterborough, and the Granite Street and Main Street intersection in Peterborough both displayed intersection approaches with below acceptable (i.e. LOS “D”) levels of service.

Location	Period	Movement	Level of Service
US 202/NH 101 at Granite St (US 202 north), Peterborough	A.M. Peak 7:30 - 8:30	EB Left SB Left SB Right	A E B
	P.M. Peak 4:30-5:30	EB Left SB Left SB Right	B F B
Granite St at Pine St, Peterborough	A.M. Peak 8:00-9:00	SB Left WB Left & Right	A B
	P.M. Peak 4:15-5:15	SB Left WB Left & Right	A B
Granite St at Main St, Peterborough	A.M. Peak 7:00-8:00	NB Left & Thru EB Left EB Right	A E B
	P.M. Peak 4:30-5:30	NB Left & Thru EB Left EB Right	A F B
US 202 (Main St) at NH 31, Antrim	A.M. Peak 6:45-7:45	EB Left & Thru SB Left & Right	A C
	P.M. Peak 3:30-4:30	EB Left & Thru SB Left & Thru	A C

US 202 Corridor Study Intersection Analysis

US 202 @ NH 119, Rindge



A.M. Peak Hour Traffic Volume & Level of Service	
7:00 am - 8:00 am	
Peak Hour Total: 761	
A.M. LOS: = C	
Critical v/c = 0.	

P.M. Peak Hour Traffic Volume & Level of Service	
4:15 pm - 5:15 pm	
Peak Hour Total: 1,179	
P.M. LOS: = C	
Critical v/c = 0.	

Total A.M. Traffic: 1,954
6:00 - 9:00 a.m.

Total P.M. Traffic: 2,665
3:30 - 6:00 p.m.

Location: US 202 @ NH 119, Rindge

Operation: Signalized, Actuated

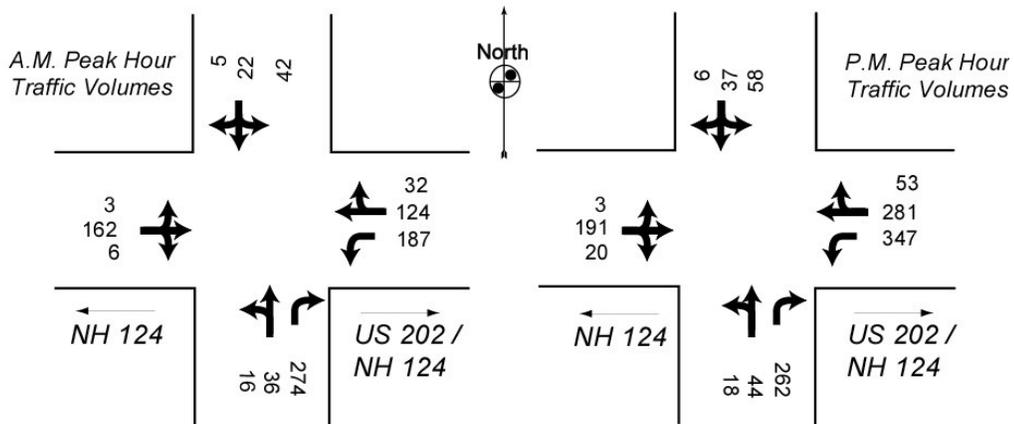
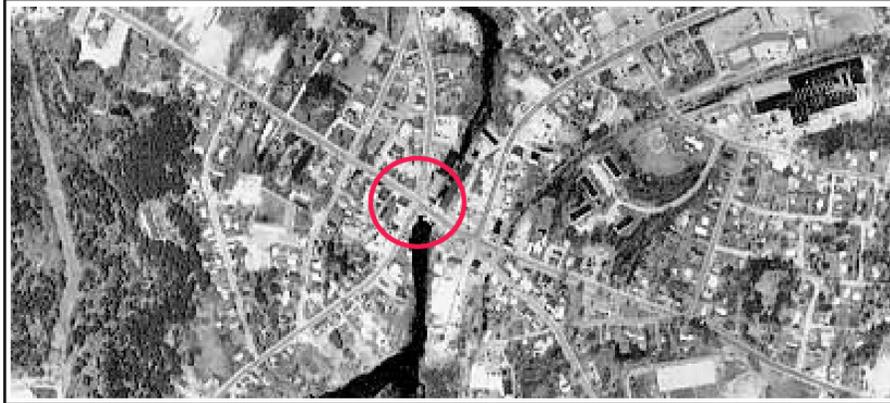
5-Year Accident Record (1994-1998): 7 accidents, 2 injuries, 0 fatalities

Date of Observation: January 2001

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US 202 Corridor Study Intersection Analysis

US 202 (River St) @ NH 124/US 202, Jaffrey



A.M. Peak Hour Traffic Volume & Level of Service	
7:00 am - 8:00 am Peak Hour Total: 909	
A.M. LOS: = C Critical v/c = 0.	

Total A.M. Traffic: 2,402
6:00 - 9:00 a.m.

P.M. Peak Hour Traffic Volume & Level of Service	
3:30 pm - 4:30 pm Peak Hour Total: 1,320	
P.M. LOS: = C Critical v/c = 0.	

Total P.M. Traffic: 3,058
3:30 - 6:00 p.m.

Location: US 202 (River St) @ NH124/US 202, Jaffrey

Operation: Signalized, Actuated

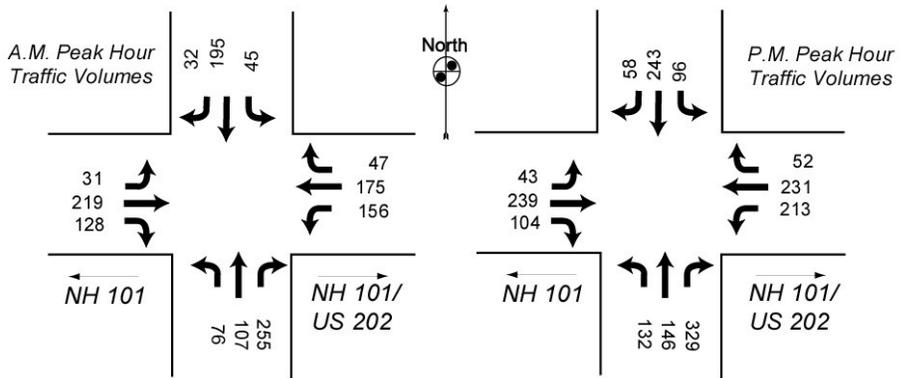
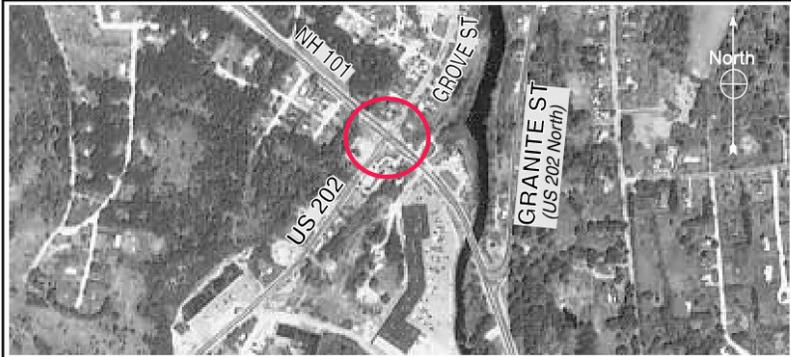
5-Year Accident Record (1994-1998): 11 accidents, 8 injuries, 0 fatalities

Date of Observation: January 2001

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US 202 Corridor Study Intersection Analysis

US 202S @ NH 101/US 202, Peterborough



**A.M. Peak Hour
Traffic Volume & Level of Service**

8:00 am - 9:00 am
Peak Hour Total: 1,466

A.M. LOS: = D
Critical v/c = 0.

Total A.M. Traffic: 3,610
6:00 - 9:00 a.m.

**P.M. Peak Hour
Traffic Volume & Level of Service**

4:30 pm - 5:30 pm
Peak Hour Total: 1,886

P.M. LOS: = D
Critical v/c = 0.

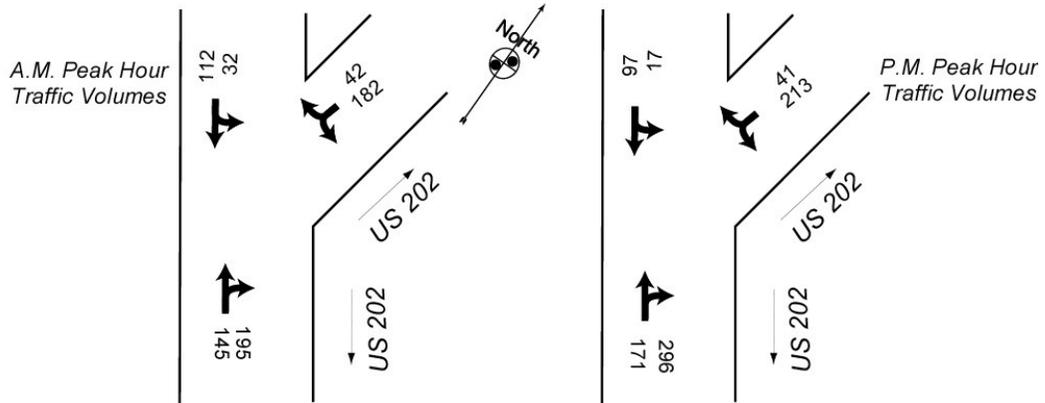
Total P.M. Traffic: 5,165
3:30 - 6:30 p.m.

Location: US 202S @ NH101/US 202, Peterborough
Operation: Signalized, Actuated
5-Year Accident Record (1994-1998): 5 accidents, 4 injuries, 0 fatalities
Date of Observation: October 2001

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US 202 Corridor Study Intersection Analysis

US 202 @ NH 31, Antrim



A.M. Peak Hour Traffic Volume & Level of Service	
6:45 am - 7:45 am Peak Hour Total: 708	
A.M. LOS: EB Left & Thru = A SB Left & Right = C	

Total A.M. Traffic: 1,723
6:00 - 9:00 a.m.

P.M. Peak Hour Traffic Volume & Level of Service	
3:30 pm - 4:30 pm Peak Hour Total: 835	
P.M. LOS: EB Left & Thru = A SB Left and Right = C	

Total P.M. Traffic: 1,873
3:30 - 6:00 p.m.

Location: US 202 @ NH 31, Antrim

Operation: Unsignalized, Stop Sign

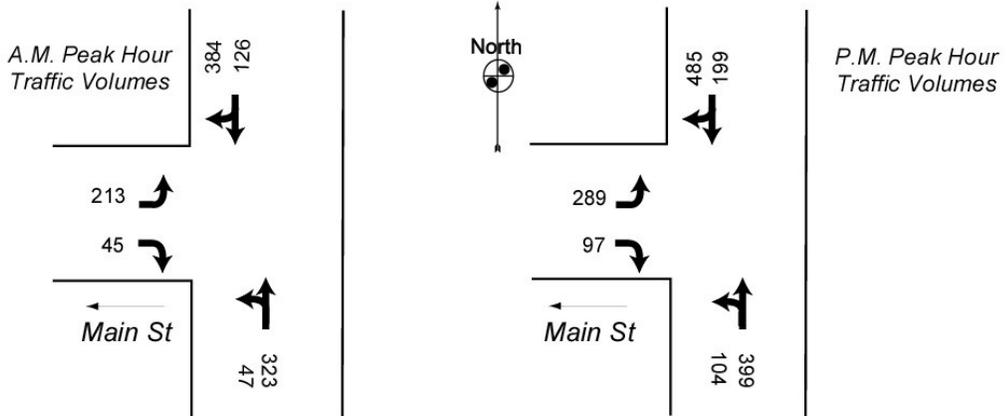
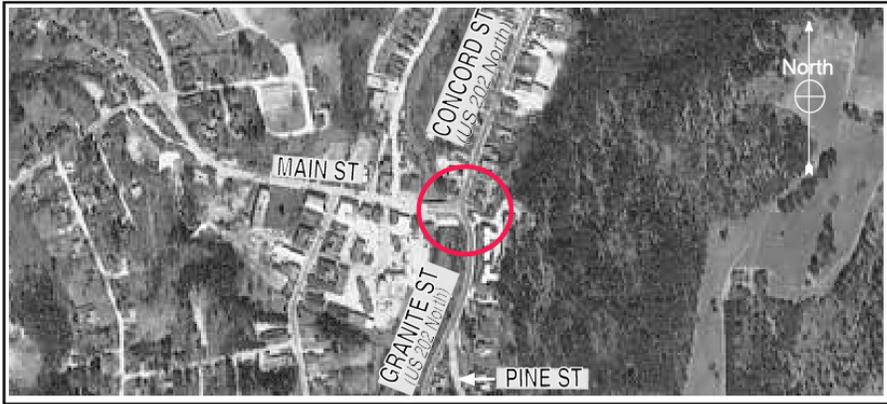
5-Year Accident Record (1994-1998): 2 accidents, 0 injuries, 0 fatalities

Date of Observation: January 2001

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US 202 Corridor Study Intersection Analysis

US 202N @ Main St, Peterborough



**A.M. Peak Hour
Traffic Volume & Level of Service**

7:00 am - 8:00 am
Peak Hour Total: 1,138

A.M. LOS: NB Left & Thru = A
EB Left = E EB Right = B

**P.M. Peak Hour
Traffic Volume & Level of Service**

4:30 pm - 5:30 pm
Peak Hour Total: 1,573

P.M. LOS: NB Left & Thru = A
EB Left = F EB Right = B

Total A.M. Traffic: 2,878
6:00 - 9:00 a.m.

Total P.M. Traffic: 3,532
3:30 - 6:00 p.m.

Location: US 202N @ Main St, Peterborough

Operation: Unsignalized, Stop Sign

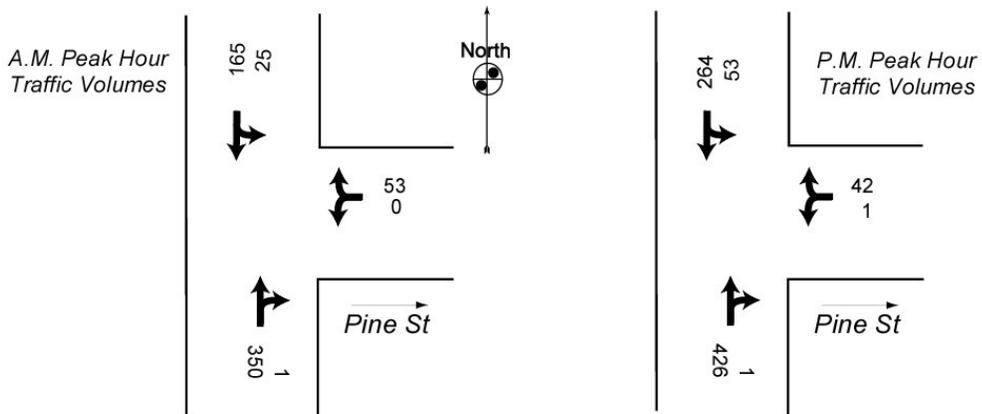
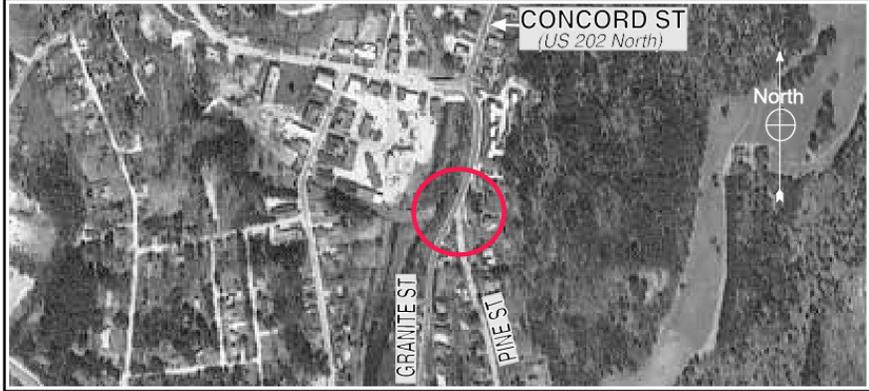
5-Year Accident Record (1994-1998): 6 accidents, 1 injury, 0 fatalities

Date of Observation: October 2000

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US 202 Corridor Study Intersection Analysis

US 202N @ Pine St, Peterborough



**A.M. Peak Hour
Traffic Volume & Level of Service**

8:00 am - 9:00 am
Peak Hour Total: 594

A.M. LOS: SB Left & Thru = A
WB Left & Right = B

Total A.M. Traffic: 1,137
7:00 - 9:00 a.m.

**P.M. Peak Hour
Traffic Volume & Level of Service**

4:15 pm - 5:15 pm
Peak Hour Total: 787

P.M. LOS: SB Left & Thru = A
WB Left & Right = B

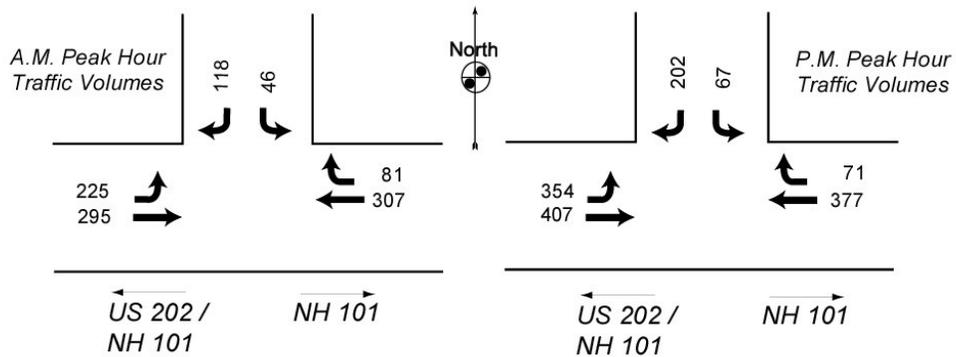
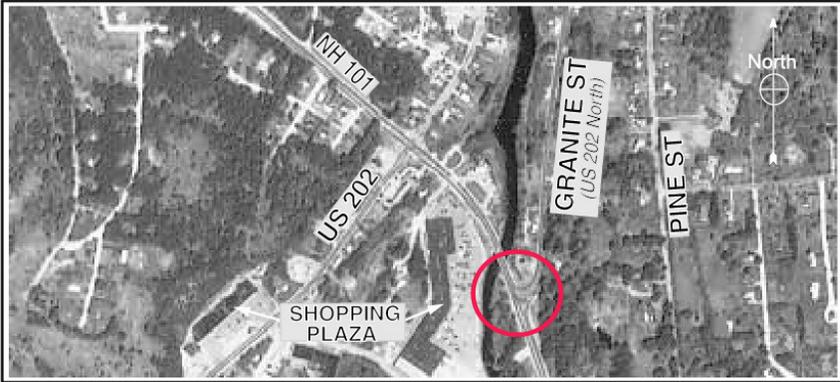
Total P.M. Traffic: 1,432
4:00 - 6:00 p.m.

Location: US 202N @ Pine St, Peterborough
Operation: Unsignalized, Stop Sign
5-Year Accident Record (1994-1998): 5 accidents, 6 injuries, 0 fatalities
Date of Observation: October 2000

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US 202 Corridor Study Intersection Analysis

US 202N @ NH 101/US 202, Peterborough



A.M. Peak Hour Traffic Volume & Level of Service	
7:30 am - 8:30 am Peak Hour Total: 1,072	
A.M. LOS: = EB Left = A SB Left = E SB Right = B	

Total A.M. Traffic: 2,672
6:00 - 9:00 a.m.

P.M. Peak Hour Traffic Volume & Level of Service	
4:30 pm - 5:30 pm Peak Hour Total: 1,478	
P.M. LOS: = EB Left = B SB Left = F SB Right = B	

Total P.M. Traffic: 3,992
3:30 - 6:30 p.m.

Location: US 202N @ NH101/US 202, Peterborough

Operation: Unsignalized, Stop Sign

5-Year Accident Record (1994-1998): 2 accidents, 0 injuries, 0 fatalities

Date of Observation: October 2001

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Accidents

Reportable accidents on US 202 from Rindge through Antrim involving property damage and those resulting in \$1,000 or more of damage for the period 1994-1998, were obtained from the NH DOT. A total of 377 locatable accidents were then integrated into the Commission's GIS along with details about fatalities, injuries, weather and road surface conditions, and accident type. Accident details were unavailable for reportable accidents in 1997.

A total of 377 accidents were identified on US 202 for the period 1994-1998, two of which were fatal occurring on US 202 in North Peterborough between Cavender Rd and Scott Mitchell Road. Accidents on US 202 in Peterborough, Jaffrey and Rindge accounted for 47%, 25% and 11% of total accidents, respectively. Antrim accounted for 11% of all accidents on US 202, with Bennington and Hancock accounting for 3% and 2%, respectively.

Frequent Accident Locations:

# of Accidents	Location	Town
7	US 202 vicinity of Old Concord Rd	Antrim
15	US 202 between NH 31 and Aiken St	Antrim
16	US 202 between Scott Mitchell and Vose Farm Roads	Peterborough
7	US 202 at NH 136	Peterborough
29	US 202 between Sand Hill Rd and Main St	Peterborough
22	US 202 between Grove St and Grove St Ext.	Peterborough
9	US 202 vicinity of Sharon Rd	Peterborough
7	US 202 vicinity of Pierce Crossing Rd	Jaffrey
7	US 202 between Cheshire St and Fitch Rd	Jaffrey
10	US 202 between Webster St and Baldwin Ct	Jaffrey
19	US 202/Main St	Jaffrey
22	US 202 between School St and Tyler Hill	Jaffrey
6	US 202 between Goodall Rd & Old NH 119	Rindge
8	US 202 vicinity of US 202 and NH 119	Rindge

Origin and Destination Surveys

Origin and Destination surveys were conducted at the principal points of ingress and egress in the corridor - the intersections of NH 119 and US 202 in Rindge, US 202 and NH 101 in Peterborough, and US 202 and NH 9 in Hillsborough. The surveys were conducted during the morning hours of 6:30 and 9 a.m. and afternoon hours of 3:30 and 6:00 p.m. on the days of July 11, 2001, July 25, 2001, and June 19, 2002.

The data collected included trip origin, destination and purpose, vehicle occupancy, driver seat belt use, and state vehicle registration. A total of 4,356 drivers were surveyed. Trips were classified according to origin and destination and then by 15 mile radii to the US 202 corridor. Trips with a corridor town origin and destination were considered internal-internal trips; internal-external trips originated in a corridor town and ended in a non-corridor town; external-internal trips originated in a non-corridor town and ended in a corridor town; and external-external trips originated and ended in a non-corridor town.

Findings:

- 43% of trips had both an origin and destination in a corridor town; 19% of trips originated in a corridor town and had a destination outside a corridor town; 25% of trips originated outside a corridor town and had a destination in a corridor town; and 14% were through traffic with an origin and destination outside a corridor town.
- Daily commuter activity accounted for 43% of trips, 13% of trips were area business, 30% were personal business or errands, 12% were recreational and business travel, and the remaining 2% were not specified.
 - of the daily commuter trips, 45% had a corridor town origin and destination; 21% originated in a corridor town and ended in a town within 15 miles of the corridor, 25% originated in a town within 15 miles of the corridor and ended in a corridor town, and about 9% of through trips originated and ended in a town within 15 miles of the corridor.
 - of the area business trips, 30% had a corridor town origin and destination, 22% originated in a corridor town and ended in a town within 15 miles of the corridor, 31% originated in a town within 15 miles of the corridor and ended in a corridor town; and 17% of through trips originated and ended in a town within 15 miles of the corridor
- 95% of the total number of vehicles surveyed were passenger vehicles. The remaining 5% surveyed comprised truck traffic, buses, and bicyclists.
- 74% of vehicles surveyed were occupied by only the driver. Vehicles with two or more occupants tended to be families and friends traveling to recreational events or work crews.
- Only 52% of drivers surveyed were wearing a seatbelt.
- The majority of vehicles surveyed (85%) were registered in the State of New Hampshire.

Origin and Destination Survey Summary Data

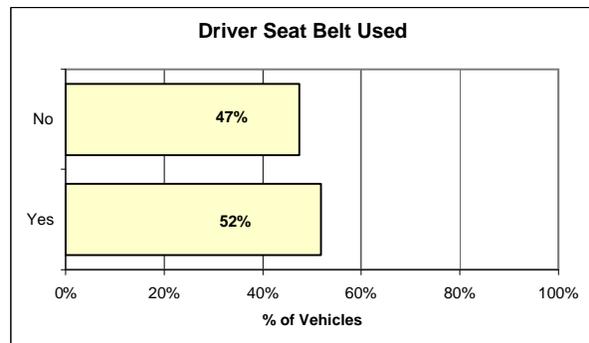
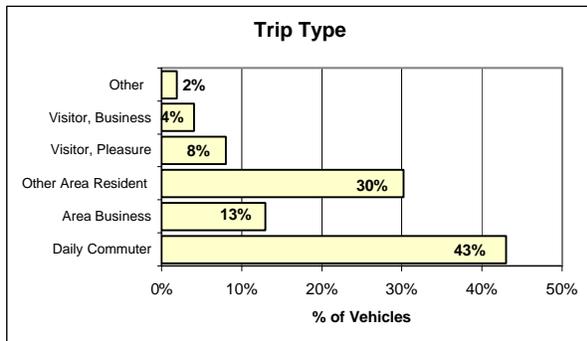
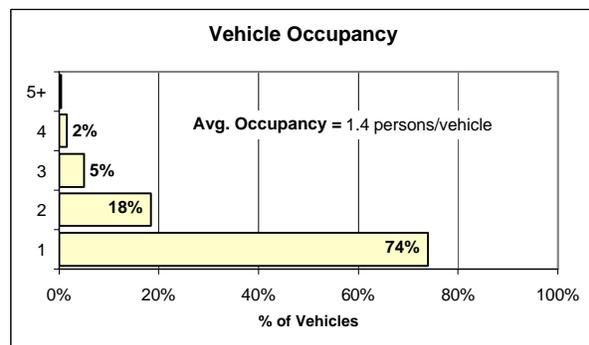
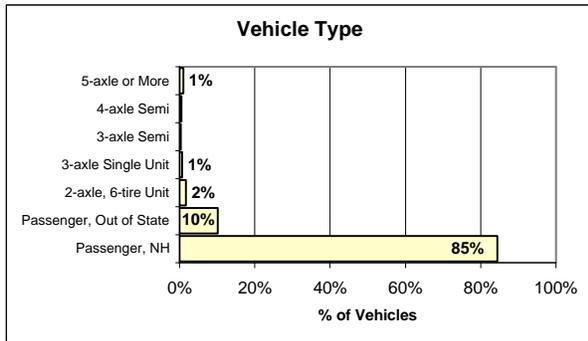
Origin and Destination Survey - Rindge, Peterborough and Hillsborough

Vehicle Type	Count	% of Total
Passenger, NH	3,682	85%
Passenger, Out of State	439	10%
2-axle, 6-tire Unit	75	2%
3-axle Single Unit	26	1%
3-axle Semi	11	0%
4-axle Semi	17	0%
5-axle or More	42	1%
Bus	9	0%
Motorcycle	32	1%
Bicyclist	6	0%
Other	17	0%
Total:	4,356	100%

Occupancy persons/vehicle	Count	% of Total
1	3,223	74%
2	803	18%
3	218	5%
4	71	2%
5	10	0%
6	5	0%
7	0	0%
8	0	0%
9	1	0%
10	0	0%
25	1	0%
50 and more	2	0%
Other	22	1%
Total:	4,356	100%

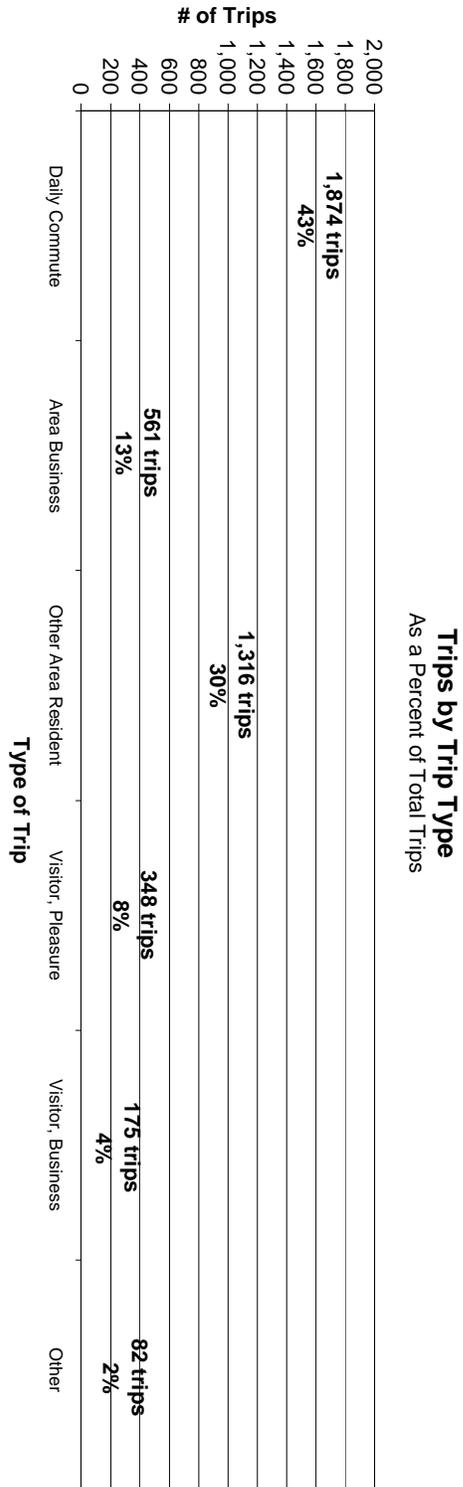
Trip Type	Count	% of Total
Daily Commuter	1,874	43%
Area Business	562	13%
Other Area Resident	1,315	30%
Visitor, Pleasure	348	8%
Visitor, Business	175	4%
Other	82	2%
Total:	4,356	100%

Driver Seat Belt	Count	% of Total
Yes	2,255	52%
No	2,067	47%
Other	6	0%
Not Applicable	28	1%
Total:	4,356	100%



Source: SWRPC and CNHRPC, US 202 Corridor Study Origin and Destination Survey, Summer 2001&2002.

Origin and Destination Survey Summary Data



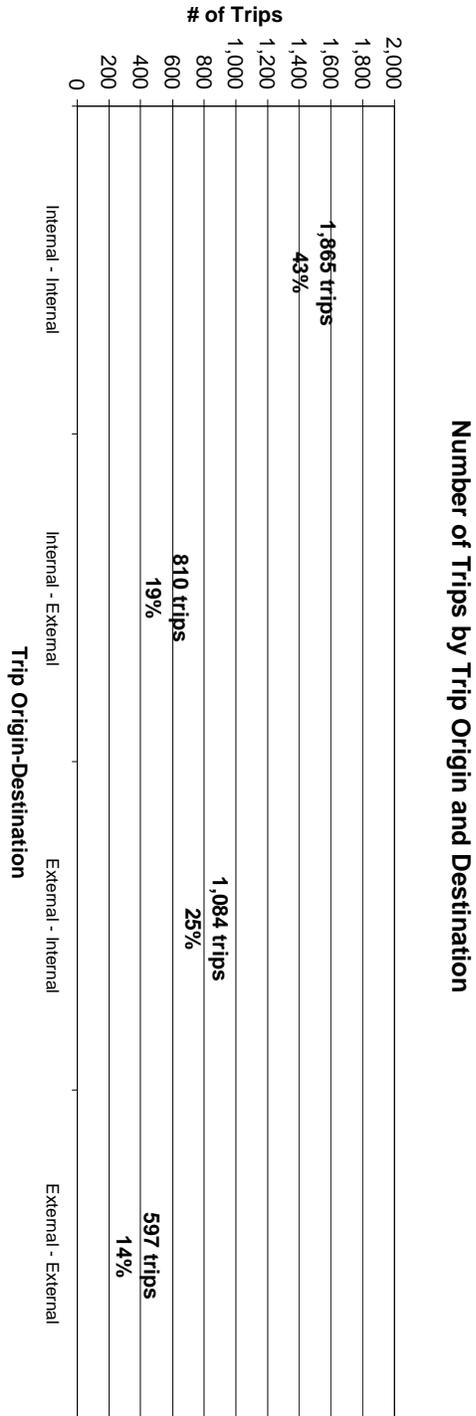
Internal - Internal - trip origin and destination within Corridor Town
Internal - External - trip origin within Corridor Town; destination non-Corridor Town

External - Internal - trip origin non-Corridor Town; destination Corridor Town
External - External (through traffic) - trip origin and destination non-Corridor Town

Type of Trip	Origin - Destination				Total	% Total				
	Internal - Internal # of Vehicles	% total	Internal - External # of Vehicles	% total			External - Internal # of Vehicles	% total	External - External # of Vehicles	% total
Daily Commute	838	45%	385	48%	1,223	30%	177	30%	1,874	43%
Area Business	171	9%	123	15%	294	16%	95	16%	561	13%
Other Area Resident	796	43%	178	22%	974	23%	95	16%	1,316	30%
Visitor, Pleasure	44	2%	85	10%	129	11%	103	17%	348	8%
Visitor, Business	12	1%	37	5%	49	6%	56	9%	175	4%
Other	4	0%	2	0%	6	0%	71	12%	82	2%
Total	1,865	100%	810	100%	1,084	100%	597	100%	4,356	100%

Source: SWRPC and CNHRPC, US 202 Corridor Study Origin and Destination Survey, Summer 2001&2002.

Origin and Destination Survey Summary Data



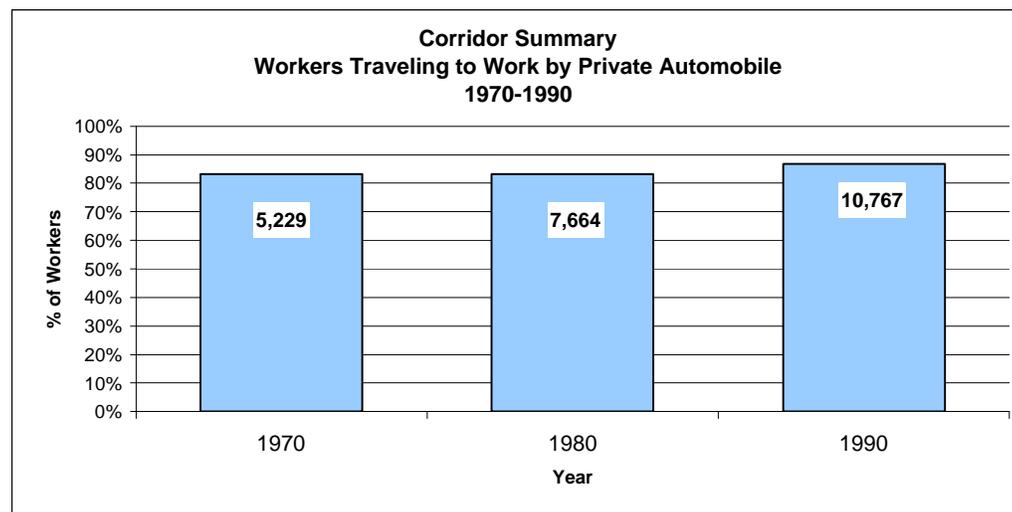
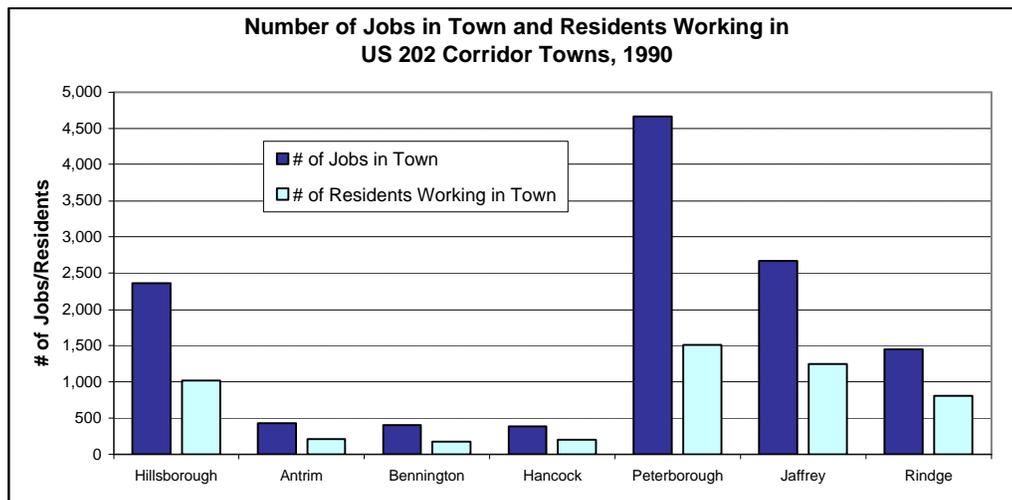
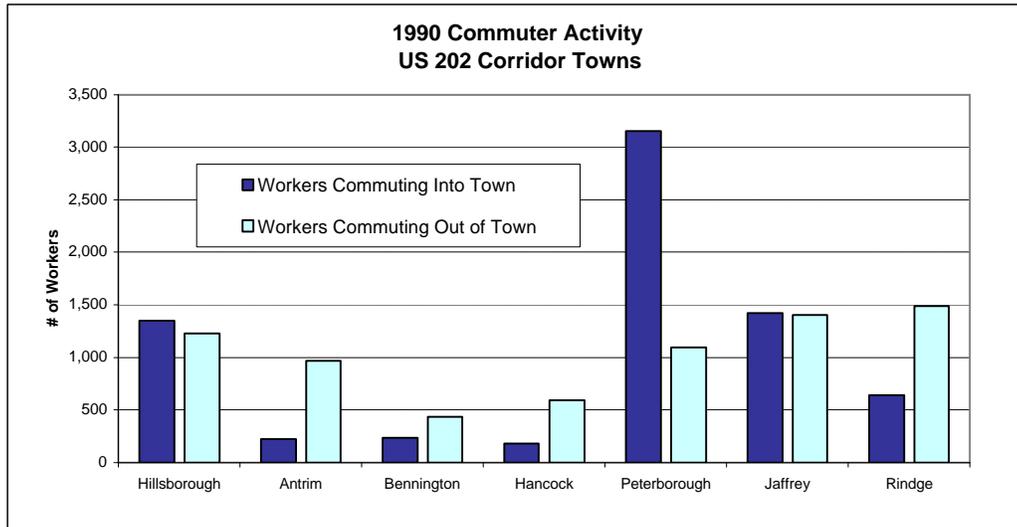
Internal - Internal - trip origin and destination within Corridor Town
Internal - External - trip origin within Corridor Town; destination non-Corridor Town

External - Internal - trip origin non-Corridor Town; destination Corridor Town
External - External (through traffic) - trip origin and destination non-Corridor Town

Trip Type	Origin and Destination Survey Location				Total # of Vehicles % of Total
	Rindge # of Vehicles % of Total	Peterborough # of Vehicles % of Total	Hillsborough # of Vehicles % of Total	Total # of Vehicles % of Total	
Internal - Internal	490 38%	798 50%	577 39%	1,865 43%	
Internal - External	269 21%	249 16%	292 20%	810 19%	
External - Internal	348 27%	393 25%	343 23%	1,084 25%	
External - External	199 15%	144 9%	254 17%	597 14%	
Total	1,306 100%	1,584 100%	1,466 100%	4,356 100%	

Source: SWRPC and CNHRPC, US 202 Corridor Study Origin and Destination Survey, Summer 2001&2002.

US 202 Corridor Commuter Activity



Source: US Census, 1980; 1980; 1990.

2001 Business Owners Survey

A survey of business owners along US 202 corridor was conducted during the summer of 2001. A total of 274 businesses were contacted of which 123 business owners participated in the survey (26 declined), for a response rate of 54%.

The survey results describe commerce in the Corridor and the transportation needs and impact of US 202 corridor business. Data collected through the survey included type of business, size of work force, satisfaction with municipal services, tenure at the current location, customer activity, shipping and receiving activity, plans for change during the next 5 years, and business owner's opinions regarding US 202 relative to their business and community life in general.

Findings:

- Approximately half of the business surveyed were retail (30%) and service (24%). The majority of workers were classified as "Skilled".
- Nearly half (49%) of the surveyed businesses have less than 5 employees. Businesses with fewer than 25 employees accounted for 86% of the businesses surveyed. Five businesses reported over 100 employees.
- Nearly 40% of businesses reported that at least 20% of their workforce lives in the same town as their business.
- The majority (55%) of the businesses share their space with other businesses, 53% rent their space, and only 6% are home-based businesses. Over half of the businesses occupy less than 2,500 square feet.
- Just over half of the businesses have been at their current location for less than 10 years; 23% have been at their current location for 10-24 years; and the remaining 24% have been at their current location for 25 or more years.
- In general, business owners reported that they chose to locate on US 202 due to visibility, traffic volumes, and space requirements.
- About half (51%) of businesses rely on pass-by traffic for a portion of their business. Nearly a quarter (24%) of the businesses receive between 1 and 9 customer visits per day while over 20% of the businesses received over 100 customer visits per day. 13% of the businesses received no customer visits.
- A majority of businesses (66%) reported variations in their business by season, while only about 45% reported variability due to time of day or day of week
- The majority of businesses indicated that they had no plans for change in the next five years. Of those anticipating change, 87% indicated that changes are expected to occur at their current location.
- A significant majority of the businesses responding (90%) indicated that they supported the use of shared driveways.

Land Cover

Land cover within a one-mile radius of US 202 was delineated manually from 1998 Digital Ortho-rectified Aerial Photography and classified as agriculture, barren land, developed, recreation, undeveloped or water. Due to the expanded radius (study area is 1,000 feet either side of US 202), the analysis also includes portions of the towns of Greenfield and Sharon which are outside of the study area. Due to the limited extent of US 202 in Hillsborough (about ½ mile) this analysis only includes the towns from Antrim south to Rindge.

Some findings:

- 73% of the land area within the 1 mile radius is undeveloped.
- Developed land constitutes 17% of the land area. Agricultural lands and water account for 5% each.
- Only a negligible amount (< 1%) of barren land and recreational uses were identified within the corridor.
- Within the towns, Hancock, Rindge and Antrim have the highest percentage of undeveloped land (80%, 78% and 74%, respectively); Peterborough, Bennington and Jaffrey have the highest percentage of developed land (21%, 21% and 20%, respectively).
- Peterborough accounts for 27% of the total land area by town. Rindge, Antrim, Jaffrey and Hancock account for 18%, 17%, 15%, and 13%, respectively. Bennington accounts for 8% of the land area by town.

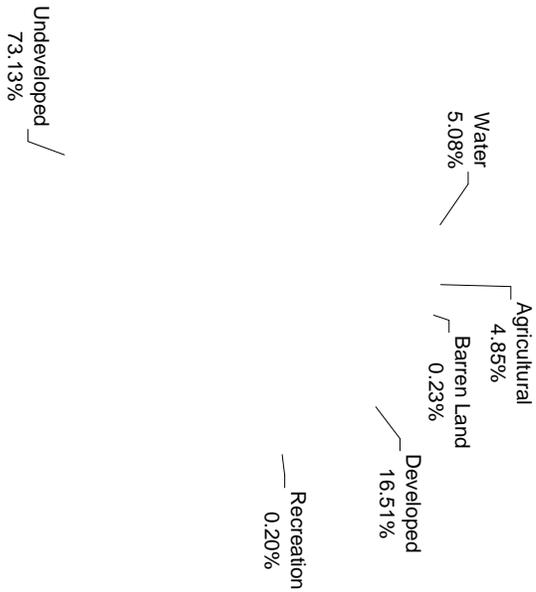
US 202 Corridor Land Cover

1 Mile Radius

	Acres	% Total
Agricultural	959	5%
Barren Land	46	0%
Developed	3,263	17%
Recreation	39	0%
Undeveloped	14,459	73%
Water	1,005	5%
Total:	19,771	

	Antrim	Bennington	Hancock	Greenfield	Sharon	Peterborough	Jaffrey	Rindge
Agricultural	223	88	167	0	3	172	195	110
Barren Land	0	1	0	0	6	15	9	15
Developed	581	341	224	0	1	1,111	576	429
Recreation	0	0	0	0	0	33	6	0
Undeveloped	2,454	1,015	2,033	44	242	3,943	1,902	2,827
Water	61	172	106	41	0	108	256	260
Total:	3,319	1,617	2,530	86	252	5,383	2,943	3,641

US 202 Corridor Land Cover



Generalized Zoning

The 21 unique municipal zoning districts within the study area were aggregated into four generalized zoning districts - Rural, Residential, Commercial/Business/Mixed Use and Industrial.

- Most parcels (56%) within the Corridor are subject to Rural zoning, typified by low density residential and agricultural activities where lot sizes range from 60,000 square feet (about 1.4 acres) to 4 acres.
- Commercial/Business/Mixed Use Districts regulate 28% of the land area. Permitted uses range from residential to retail and commercial services where lot sizes range from no minimum to a 2 acre minimum.
- Higher density Residential Districts cover 11% of the land area where lot sizes range from 10,000 square feet to 130,000 square feet (0.23 acres to 3 acres).
- Industrial Districts regulate 5% of land area where lot sizes ranging from 40,000 square feet (about 1 acre) to 5 acres.

Land Use

Municipal tax assessor data was used to summarize land use within the Corridor.

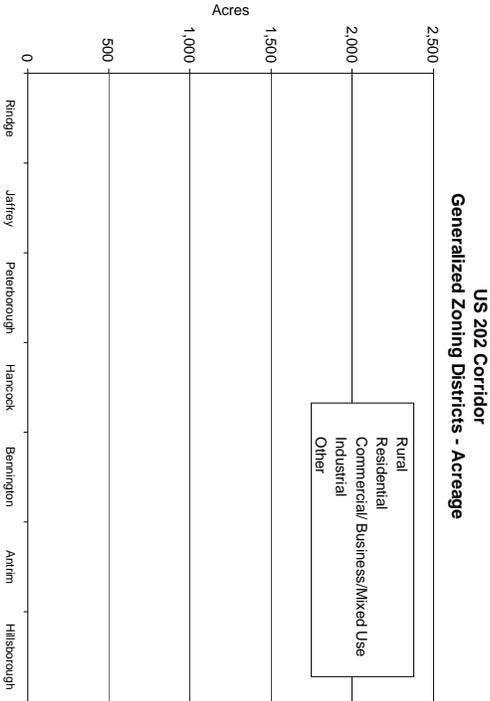
- Residential development is predominant, accounting for 66% of the 1,896 parcels in the Corridor.
- Thirteen percent of the parcels in the Corridor are undeveloped or are used for agriculture.
- Eleven percent of the parcels are used for commercial activities.
- There are few Mixed Use and Industrial properties in the corridor accounting for only 2% and 1% of parcels respectively.

Generalized Zoning US 202 Corridor Summary

Generalized Zoning Districts Acreage *

Town	Commercial/					Total
	Rural	Residential	Business/Mixed Use	Industrial	Other	
Rindge	1,053	185	898	0	0	2,136
Jeffrey	782	123	162	314	0	1,381
Peterborough	2,089	771	166	233	0	3,229
Hancock	1,366	0	0	0	0	1,366
Bernington	556	0	202	70	0	828
Avonm	402	163	1,571	0	29	2,164
Hillsborough	88	0	117	0	0	205
Total	6,306	1,241	3,116	617	29	11,310

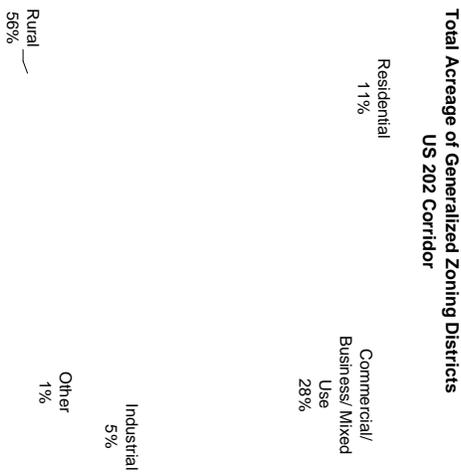
* Source: Municipal Tax Assessor Databases



Generalized Table of Uses and Lot Requirements

Uses *	Commercial/			
	Rural	Residential	Business/Mixed Use	Industrial
Residential	Residential	Residential	Retail	Manufacturing
Agriculture and Forestry	Home Occupations	Day Care	Consumer Services	Research & Development
Recreational Facilities	Recreational Facilities	Home Occupations	Offices	Warehousing/Wholesale
		Educational Facilities	Residential	Transportation Facilities
Lot Requirement Ranges	60,000sf - 4 acres	10,000 - 130,000 sf	no minimum - 2 acres	40,000 sf - 5 acres
Minimum Lot Size:	125-350 ft	100 - 300 ft	no minimum - 300 ft	no minimum - 500 ft
Frontage:	30-75 ft	30 - 50 ft	5 - 75 ft	100 ft
Front Setback:				

* Summaries and characterizes general intent of district only



Land Use by Generalized Use District US 202 Corridor Summary

Rural Zones					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	241	2,937	333	1,911	1,078
Commercial	15	160	1	74,549	68
Industrial	1	2	0	3,636	1
Mixed Use	1	68	1	3,474	40
Institutional/Exempt	37	737	2	0	283
Undeveloped/Agricultural	111	2,403	0	0	1,102
Unknown	0	0	0	0	0
Total	406	6,306	337	83,570	2,573

Residential Zones					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	622	897	1,067	3,786	326
Commercial	19	47	5	61,572	21
Industrial	3	4	0	27,424	1
Mixed Use	4	2	6	13,867	0
Institutional/Exempt	32	126	7	0	82
Undeveloped/Agricultural	43	167	0	0	78
Unknown	0	0	0	0	0
Total	723	1,241	1,085	106,629	508

Other					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	0	0	0	0	0
Commercial	0	0	0	0	0
Industrial	0	0	0	0	0
Mixed Use	0	0	0	0	0
Institutional/Exempt	9	29	0	0	-4.6
Undeveloped/Agricultural	0	0	0	0	0
Unknown	0	0	0	0	0
Total	9	29	0	0	-4.6

Commercial/Business/Mixed Use Zones					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	372	1,340	606	2,115	485
Commercial	163	727	35	1,166,505	236
Industrial	12	36	0	240,702	15
Mixed Use	35	42	67	193,076	9
Institutional/Exempt	43	120	1	0	31
Undeveloped/Agricultural	75	851	0	0	273
Unknown	1	0	0	0	0
Total	701	3,116	709	1,602,398	1,048

Industrial Zones					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	11	3	15	0	3
Commercial	14	125	0	228,687	34
Industrial	12	156	0	447,869	57
Mixed Use	2	6	2	72,670	5
Institutional/Exempt	5	285	0	0	121
Undeveloped/Agricultural	13	73	0	0	35
Unknown	0	0	0	0	0
Total	57	617	17	749,226	254

CORRIDOR TOTALS					
	Parcels	Acres	Residential Units	Commercial / Industrial SF	Environmentally Constrained Acres*
Residential	1,246	5,177	2,021	7,792	1,892
Commercial	211	1,059	41	1,531,313	359
Industrial	28	198	0	719,631	73
Mixed Use	42	117	76	283,087	54
Institutional/Exempt	126	1,266	10	0	513
Undeveloped/Agricultural	242	3,493	0	0	1,488
Unknown	1	0	0	0	0
Total	1,896	11,310	2,148	2,541,823	4,379

* Environmentally constrained area includes surface water and wetlands, hydric soils, and steep slopes

Land Use by Generalized Use District Hillsborough

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	7	81.75	30.55	3	0
Commercial	1	6.53	0	0	12,020
Industrial	0				
Mixed Use	0				
Institutional/Exempt	0				
Undeveloped/Agricultural	0				
Unknown	0				
Total	8	88.28	30.55	3	12,020

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	10	103.12	33.49	9	0
Commercial	4	14.01	2.94	0	37,559
Industrial	0				
Mixed Use	0				
Institutional/Exempt	0				
Undeveloped/Agricultural	0				
Unknown	0				
Total	14	117.13	36.43	9	37,559

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Land Use by Generalized Use District Antrim

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	6	230.3	84.11	6	0
Commercial	0	0	0	0	0
Industrial	0	0	0	0	0
Mixed Use	1	68	39.93	1	3,474
Institutional/Exempt	2	10.1	0	0	0
Undeveloped/Agricultural	4	93.17	13.07	0	0
Unknown	0				
Total	13	401.57	137.11	7	3,474

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	144	114.79	18.96	233	0
Commercial	1	0.52	0	5	1,840
Industrial	2	1.48	0	0	4,640
Mixed Use	1	0.11	0.01	1	3,528
Institutional/Exempt	1	0.5	0.14	0	0
Undeveloped/Agricultural	11	45.13	9.86	0	0
Unknown	0				
Total	160	162.53	28.97	239	10,008

Other

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	0	0	0	0	0
Commercial	0	0	0	0	0
Industrial	0	0	0	0	0
Mixed Use	0	0	0	0	0
Institutional/Exempt	9	28.9	-4.58	0	0
Undeveloped/Agricultural	0	0	0	0	0
Unknown	0	0	0	0	0
Total	9	28.9	-4.58	0	0

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	87	670.87	244.76	119	0
Commercial	18	89.27	18.77	18	61,312
Industrial	2	7.22	0.11	0	81,109
Mixed Use	7	21.94	2.46	15	19,739
Institutional/Exempt	11	5.35	-2.63	1	0
Undeveloped/Agricultural	40	775.96	238.48	0	0
Unknown	1				
Total	166	1570.61	501.95	153	162,160

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Land Use by Generalized Use District Bennington

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	10	155.41	61.65	10	0
Commercial / Industrial	1	2.13	1.21	0	3,636
Mixed Use	0	0.04	0	0	0
Institutional/Exempt	1	0.04	0	0	0
Undeveloped/Agricultural	14	398.73	157.52	0	0
Unknown	0	0	0	0	0
Total	26	556.31	220.38	10	3,636

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	71	130.48	32.7	83	0
Commercial / Industrial	2	0.89	0.47	0	5,398
Mixed Use	0	0	0	0	0
Institutional/Exempt	10	43.39	5.5	0	0
Undeveloped/Agricultural	8	27.39	4.55	0	0
Unknown	0	0	0	0	0
Total	91	202.15	43.22	83	5,398

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	0				
Commercial / Industrial	3	53.98	8.22	0	228,320
Mixed Use	0	0	0	0	0
Institutional/Exempt	0	0	0	0	0
Undeveloped/Agricultural	4	16	6.09	0	0
Unknown	0	0	0	0	0
Total	7	69.98	14.31	0	228,320

Land Use by Generalized Use District Hancock

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	46	745.58	225.49	49	0
Commercial	2	40.23	9.55	1	14,328
Industrial	0				
Mixed Use	0				
Institutional/Exempt	0				
Undeveloped/Agricultural	36	580.61	201.33	0	0
Unknown	0				
Total	84	1366.42	436.37	50	14,328

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Land Use by Generalized Use District Peterborough

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	32	244.05	116.92	115	0
Commercial	9	74.79	42.08	0	30,402
Industrial	0				
Mixed Use	0				
Institutional/Exempt	21	502.74	240.16	2	0
Undeveloped/Agricultural	48	1,237.74	681.64	0	0
Unknown	0				
Total	110	2,059.32	1,080.80	117	30,402

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	304	515.84	202.52	547	0
Commercial	9	25.56	14.44	0	49,458
Industrial	0				
Mixed Use	1	0.25	-0.07	1	3,172
Institutional/Exempt	24	119.95	81.76	7	0
Undeveloped/Agricultural	27	109.26	67.2	0	0
Unknown	0				
Total	365	770.86	365.85	555	52,630

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	14	10.88	5.12	51	0
Commercial	59	91.26	45.71	17	463,654
Industrial	7	25.73	14.06	0	78,325
Mixed Use	13	6.78	3.6	19	39,185
Institutional/Exempt	10	6.54	1.02	0	0
Undeveloped/Agricultural	11	24.32	16.07	0	0
Unknown	0				
Total	114	165.51	85.58	87	581,164

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial / Industrial SF
Residential	0				
Commercial	6	112.21	25.08	0	177,260
Industrial	4	77.5	37.09	0	174,733
Mixed Use	0				
Institutional/Exempt	1	0.4	-1.16	0	0
Undeveloped/Agricultural	4	43.22	18.76	0	0
Unknown	0				
Total	15	233.33	79.77	0	351,993

Land Use by Generalized Use District Jaffrey

Rural Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	73	548.28	278.08	83	1,911
Commercial	2	35.38	15.94	0	14,632
Industrial	0				
Mixed Use	0				
Institutional/Exempt	10	105.46	47.02	0	0
Undeveloped/Agricultural	9	92.71	48.05	0	0
Unknown	0				
Total	94	781.83	389.09	83	16,543

Residential Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	127	95.78	21.15	240	3,766
Commercial	6	6.06	3.07	0	10,274
Industrial	1	2.02	0.51	0	22,784
Mixed Use	2	1.32	0	4	7,167
Institutional/Exempt	7	5.98	0.18	0	0
Undeveloped/Agricultural	5	12.16	1.12	0	0
Unknown	0				
Total	148	123.32	26.03	244	43,991

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	135	83.35	32.75	285	2,115
Commercial	31	27	4.98	0	145,283
Industrial	1	2.6	0.06	0	75,870
Mixed Use	15	13.03	2.57	33	134,152
Institutional/Exempt	8	12.83	5.44	0	0
Undeveloped/Agricultural	16	23.36	14.15	0	0
Unknown	0				
Total	206	162.17	59.95	318	357,420

Industrial Zones

	Parcels	Acres	Environmentally Constrained Acres	Residential Units	Commercial/Industrial SF
Residential	11	3.46	2.8	15	0
Commercial	8	12.83	8.63	0	51,427
Industrial	5	24.06	11.42	0	44,816
Mixed Use	2	5.72	5.41	2	72,670
Institutional/Exempt	4	254.19	122.18	0	0
Undeveloped/Agricultural	5	13.7	9.88	0	0
Unknown	0				
Total	35	313.96	160.32	17	168,913

Land Use by Generalized Use District Rindge

Rural Zones

	Parcels	Acres	Environmental ly Constrained Acres	Residential Units	Commercial/ Industrial SF
Residential	67	931.81	281.406	67	0
Commercial	1	2.64	0.91	0	3,167
Industrial	0				
Mixed Use	0				
Institutional/Exempt	3	118.3	-3.851	0	0
Undeveloped/Agricultural	0				
Unknown	0				
Total	71	1052.75	278.465	67	3,167

Residential Zones

	Parcels	Acres	Environmental ly Constrained Acres	Residential Units	Commercial/ Industrial SF
Residential	47	170.12	83.424	47	0
Commercial	3	14.39	3.68	0	0
Industrial	0				
Mixed Use	0				
Institutional/Exempt	0				
Undeveloped/Agricultural	0				
Unknown	0				
Total	50	184.51	87.104	47	0

Commercial/Business/Mixed Use Zones

	Parcels	Acres	Environmental ly Constrained Acres	Residential Units	Commercial/ Industrial SF
Residential	55	340.84	136.215	59	0
Commercial	51	505.95	163.365	0	458,697
Industrial	0				
Mixed Use	0				
Institutional/Exempt	4	51.5	21.764	0	0
Undeveloped/Agricultural	0				
Unknown	0				
Total	110	898.29	321.344	59	458,697

Industrial Zones

	Parcels	Acres	Environmental ly Constrained Acres	Residential Units	Commercial/ Industrial SF
Residential					
Commercial					
Industrial					
Mixed Use					
Institutional/Exempt					
Undeveloped/Agricultural					
Unknown					
Total	0	0	0	0	0

Development Potential Analysis

A GIS analysis of the potential for future development was conducted along the US 202 Corridor to determine the potential residential, commercial, and industrial development that could occur under existing conditions: zoning standards, lot sizes, municipal services, environmental constraints, and existing land use. The analysis compares the number of housing units and amount of commercial/industrial space in the corridor today (known from municipal tax assessment data) with the computed unused or theoretical capacity for new housing units and/or commercial and industrial space.

The analysis is not intended to predict the amount of future development, but to quantify the possible maximum development. These results provide an indication of the kinds, densities and distribution of development that is possible under current zoning, property ownership and landscape conditions – to be used in asking basic questions about municipal zoning: Can current zoning create a future the community desires? - and conversely: Can current zoning create a future that the community does not want?

Findings:

Residential

There are currently 2,148 housing units in the US 202 Corridor. The GIS analysis estimates a potential for an additional 2,115 units, which would be a 98% increase. Nearly half of these additional housing units could be built in rural zones, with the remaining units allocated to other residential and commercial/business/mixed use zones.

- The number of housing units along the US 202 corridor in **Hancock** could increase from 50 to 222 – a 344% increase
- An additional 719 housing units could be built along the corridor in **Peterborough** – a 95% increase
- An additional 543 housing units could be built along the corridor in **Antrim** – a 136% increase

Commercial and Industrial

There are currently 2,527,495 square feet of commercial and industrial space in the US 202 Corridor. The GIS analysis estimates a capacity for an additional 34,303,537 square feet, or a 1,357% increase. Ninety-two percent of this increase could occur in the commercial/business/mixed use zones with the remaining 8% allocated to dedicated industrial zones.

- **Antrim's** commercial and industrial space along US 202 has the potential to increase by 9,858% - from 175,000 to 17,000,000 square feet.
- **Rindge's** commercial and industrial space along US 202 could increase by 2,289% - from 460,000 to 10,000,000 square feet.

This development potential analysis does not account for regional market trends in any way. The numbers presented here are generalized estimates of the maximum potential considering only land use regulations, property configurations and physical landscape parameters available for use in the SWRPC GIS. Any predictive discussions of probable development activity should use expected annual growth rates ranging from 0.5% to 2%.

Development Potential Analysis

US 202 Corridor Summary

Number of RESIDENTIAL HOUSING UNITS*

Zone	Count of Existing Units	Theoretical Capacity for Housing Units Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Housing Units Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use	Rural	Commercial/Business/Mixed Use	Residential	Industrial
Rural	337	1,242	923				
Commercial/Business/Mixed Use	709	916	742				
Residential	1,085	722	449				
Industrial	17	1	1				
TOTAL ALL ZONES	2,148	2,881	2,115				

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space*

Zone	Existing Commercial Space SQUARE FEET	Theoretical Capacity for Commercial Space Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Commercial Space Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use	Rural	Commercial/Business/Mixed Use	Residential	Industrial
Rural	69,242	0	0				
Commercial/Business/Mixed Use	1,602,398	37,038,687	31,424,493				
Residential	106,629	0	0				
Industrial	749,226	5,882,436	2,879,044				
TOTAL ALL ZONES	2,527,495	42,921,123	34,303,537				

Potential Increase by Town - US 202 Corridor Summary

RESIDENTIAL

	Existing Units	Theoretical Capacity	Unused Capacity	Potential Increase
Rindge	173	347	281	162%
Anttrim	399	596	543	136%
Jaffrey	662	320	158	24%
Peterborough	759	1,160	719	95%
Hancock	50	202	172	344%
Hillsborough	12	25	23	192%
Bemington	93	231	219	235%
Total:	2,148	2,881	2,115	98%

COMMERCIAL & INDUSTRIAL

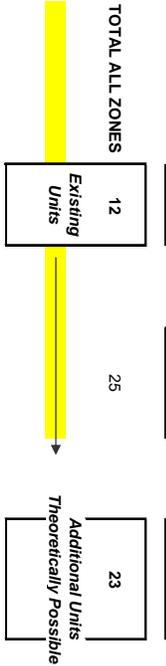
	Existing Sq. Ft.	Theoretical Capacity	Unused Capacity	Potential Increase
Rindge	461,864	12,203,531	10,572,202	2289%
Anttrim	175,642	19,161,263	17,315,074	9858%
Jaffrey	586,867	5,282,526	1,108,207	189%
Peterborough	1,016,189	3,979,194	3,399,526	335%
Hancock	0	0	0	0%
Hillsborough	49,579	1,054,588	989,976	1997%
Bemington	237,354	1,240,021	918,552	387%
Total:	2,527,495	42,921,123	34,303,537	1357%

* Calculations do not account for additional residential, commercial and/or industrial uses that may proceed under special exception. Calculations based on existing sewer and water conditions.

Development Potential Analysis Hillsborough

Number of RESIDENTIAL HOUSING UNITS

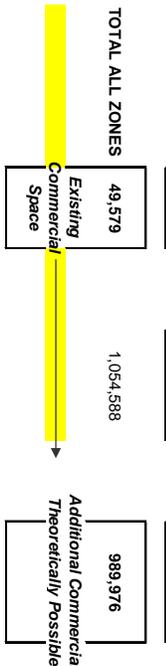
Zone	Count of Existing Units	Theoretical Capacity for Housing Units * <small>Zoning Standards Considering: Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Housing Units * <small>Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
Rural	3	25	23
Commercial	9	SE	SE



* Single-Family Residential
SE - permitted by Special Exception

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Zone	Existing Commercial Space <small>SQUARE FEET</small>	Theoretical Capacity for Commercial Space <small>Zoning Standards Considering: Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Commercial Space <small>Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
Rural	12,020	SE	SE
Commercial	37,559	1,054,588	989,976



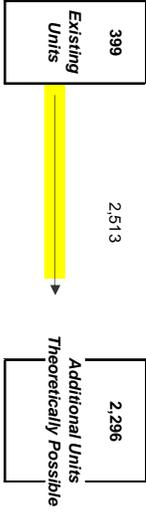
SE - permitted by Special Exception

Development Potential Analysis Antrim

Number of RESIDENTIAL HOUSING UNITS Assuming Municipal Sewer and Water

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Housing Units * Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Highway Business	57	2,139	2,089
Village Business	96	99	71
Residential	239	217	81
Rural	7	58	55
TOWN	0	0	0
TOTAL ALL ZONES	399	2,513	2,296

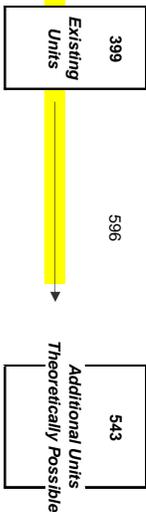
* Single-Family Residential



Number of RESIDENTIAL HOUSING UNITS Considering Existing Sewer and Water Conditions (municipal and on-site)

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Housing Units * Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Highway Business	57	451	425
Village Business	96	70	47
Residential	239	17	16
Rural	7	58	55
TOWN	0	0	0
TOTAL ALL ZONES	399	596	543

* Single-Family Residential

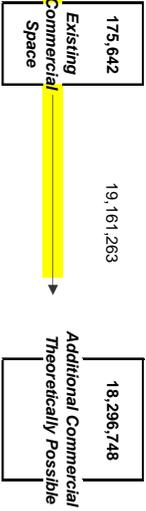


Development Potential Analysis Antrim

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Assuming Municipal Sewer and Water

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space	Unused Capacity for Commercial Space
Zoning Standards		Zoning: Lot Size, Severe Environmental Constraints & Existing Land Use	
Highway Business	27,725	18,089,146	17,625,124
Village Business	134,435	1,072,117	671,624
Residential	10,008	NP	NP
Rural	3,474	SE	SE
TOWN	0	NP	NP
TOTAL ALL ZONES	175,642	19,161,263	18,296,748

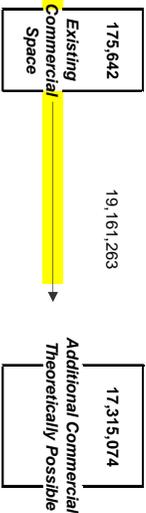


NP - not permitted
SE - permitted by Special Exception

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Considering Existing Sewer and Water Conditions (municipal and on-site)

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space	Unused Capacity for Commercial Space
Zoning Standards		Zoning: Lot Size, Severe Environmental Constraints & Existing Land Use	
Highway Business	27,725	18,089,146	16,671,450
Village Business	134,435	1,072,117	643,624
Residential	10,008	NP	NP
Rural	3,474	SE	SE
TOWN	0	NP	NP
TOTAL ALL ZONES	175,642	19,161,263	17,315,074

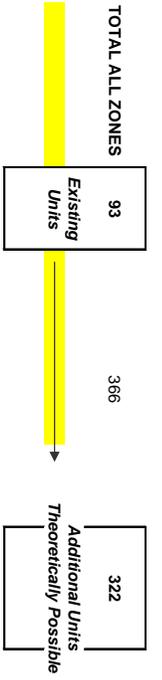


NP - not permitted
SE - permitted by Special Exception

Development Potential Analysis Bennington

Number of RESIDENTIAL HOUSING UNITS Assuming Municipal Sewer and Water

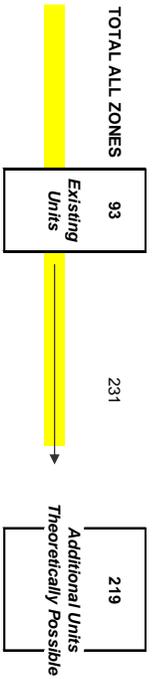
Zone	Count of Existing Units	Theoretical Capacity for Housing Units * <small>Zoning Standards Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Housing Units * <small>Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
Industrial	0	NP	NP
Village	83	207	166
Rural/ Agricultural	10	159	156



* Single-Family Residential

Number of RESIDENTIAL HOUSING UNITS Assuming On-Site Sewer and Water

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * <small>Zoning Standards Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Housing Units * <small>Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
Industrial	0	1	1
Village	83	89	80
Rural/ Agricultural	10	141	138



* Single-Family Residential
* Subject to Water Resource Overlay District: limited to residential uses only when municipal sewer and water are unavailable.

Development Potential Analysis Bennington

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Assuming Municipal Sewer and Water

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space	Unused Capacity for Commercial Space
	SQUARE FEET	Zoning Standards Considering: Existing Lot Size & Severe Environmental Constraints	Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use

Industrial	228,320	727,495	499,201
Village	5,398	1,581,750	1,158,869
Rural/ Agricultural	3,636	SE	SE

TOTAL ALL ZONES	237,354	2,309,245	1,658,070
	Existing Commercial Space		Additional Commercial Theoretically Possible

SE - permitted by Special Exception

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Assuming On-Site Sewer and Water

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space	Unused Capacity for Commercial Space
	SQUARE FEET	Zoning Standards Considering: Existing Lot Size & Severe Environmental Constraints	Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use

Industrial	228,320	641,115	412,821
Village	5,398	598,906	505,731
Rural/ Agricultural	3,636	SE	SE

TOTAL ALL ZONES	237,354	1,240,021	918,552
	Existing Commercial Space		Additional Commercial Theoretically Possible

SE - permitted by Special Exception

Development Potential Analysis Hancock

Number of RESIDENTIAL HOUSING UNITS

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Housing Units * Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Agricultural & Rural	50	202	172
TOTAL ALL ZONES	50 Existing Units	202	172 Additional Units Theoretically Possible

* Single-Family Residential

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Zone	Existing Commercial Space SQUARE FEET	Theoretical Capacity for Commercial Space Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Unused Capacity for Commercial Space Existing Land Use
Agricultural & Rural	NP	NP	NP
TOTAL ALL ZONES	0 Existing Commercial Space	0	0 Additional Commercial Theoretically Possible

NP - not permitted

Development Potential Analysis Peterborough

Number of RESIDENTIAL HOUSING UNITS

Zone	Count of Existing Units	Theoretical Capacity for Housing Units *	Unused Capacity for Housing Units *
		Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Commercial	70	141	110
Downtown Commercial	17	122	47
Family	178	303	229
General Residence	377	274	122
Industrial	0	NP	NP
Rural	117	320	211
TOTAL ALL ZONES	759	1,160	719

* Single-Family Residential
NP - not permitted

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space*	Unused Capacity for Commercial Space*
	SQUARE FEET	Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Commercial	397,069	1,493,392	1,197,898
Downtown Commercial	184,095	256,133	111,940
Family	0	NP	NP
General Residence	52,630	SE	SE
Industrial**	351,993	2,229,669	2,089,688
Rural	30,402	NP	NP
TOTAL ALL ZONES	1,016,189	3,979,194	3,399,526

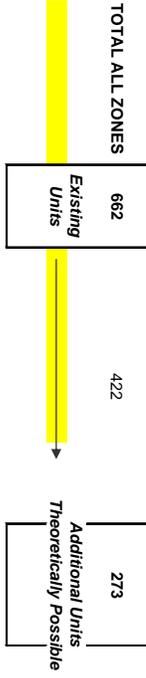
NP - not permitted
SE - permitted by Special Exception
* Using Minimum Lot Size and Setbacks to determine % Lot Coverage
** 2:1 open space ratio used to determine % lot coverage; requires town sewer and water

Development Potential Analysis Jaffrey

Number of RESIDENTIAL HOUSING UNITS

Assuming Municipal Sewer and Water

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * <small>Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Housing Units * <small>Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
General Business	318	35	18
Industrial	17	NP	NP
Res A	145	84	42
Res B	99	60	46
Rural	83	243	167

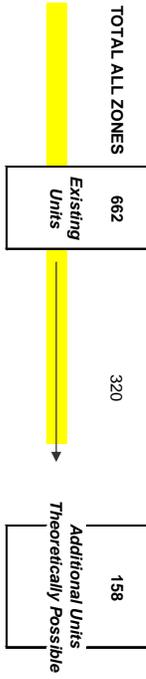


* Single-Family Residential
NP - not permitted

Number of RESIDENTIAL HOUSING UNITS

Considering Existing Sewer and Water Conditions (municipal and on-site)

Zone	Count of Existing Units	Theoretical Capacity for Housing Units * <small>Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints</small>	Unused Capacity for Housing Units * <small>Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use</small>
General Business	318	19	18
Industrial	17	NP	NP
Res A	145	47	33
Res B	99	52	33
Rural	83	202	74



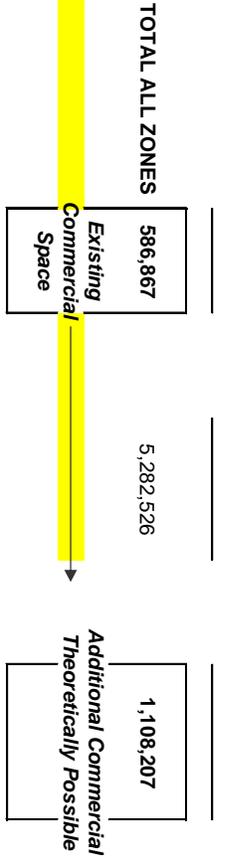
* Single-Family Residential
NP - not permitted

Development Potential Analysis Jaffrey

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Zone	Existing Commercial Space	Theoretical Capacity for Commercial Space *	Unused Capacity for Commercial Space *
	SQUARE FEET	Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use

General Business	357,420	2,270,874	731,672
Industrial	168,913	3,011,652	376,535
Res A	13,161	NP	NP
Res B	30,830	NP	NP
Rural	16,543	SE	SE



NP - not permitted
SE - permitted by Special Exception
* Using Minimum Lot Size and Setbacks to determine a standard % Lot Coverage

Development Potential Analysis Rindge

Number of RESIDENTIAL HOUSING UNITS

Zone	Count of Existing Units	Theoretical Capacity for Housing Units *	
		Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Residential/Agricultural	67	294	250
Residential	47	29	16
Village	31	24	15
Commercial	14	NP	NP
Business/Light Industry	14	NP	NP
TOTAL ALL ZONES	173	347	281

* Single-Family Residential
NP - not permitted

Square Feet of COMMERCIAL & INDUSTRIAL Floor Space

Zone	Existing Commercial Space SQUARE FEET	Theoretical Capacity for Commercial Space*	
		Considering: Zoning Standards Existing Lot Size & Severe Environmental Constraints	Considering: Zoning, Lot Size, Severe Environmental Constraints & Existing Land Use
Residential/Agricultural	3,167	NP	NP
Residential	0	NP	NP
Village	16,543	2,024,791	1,285,848
Commercial	109,575	2,589,407	2,209,741
Business/Light Industry	332,579	7,589,333	7,076,613
TOTAL ALL ZONES	461,864	12,203,531	10,572,202

NP - not permitted
* Using Minimum Lot Size and Setbacks to determine a standard % Lot Coverage

Future Land Use and Community Development Plans

The following pages present a summary of future land use and community development plans for each of the seven corridor towns. The first portion of this plan review was to determine the following: a) whether the local land use regulations are generally consistent with the Town's future land use and community development plans, and b) whether specific goals, policies and recommendations regarding US 202 have been developed by the Town. Following this checklist is a summary of each Town's Master Plan proposals, goals, objectives, policies, and recommendation regarding US 202.

Town of Hillsborough

Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *"Many Hillsborough residents commute to other communities to work and hence rely on the major roads: Routes 9, 202, 149 and 31..." (26)*
- *"Where the bypass begins and ends, and where it joins Route 202, development pressures will occur and this will inevitably lead to traffic problems at these junctions..." (34-35)*
- *"Hillsborough should develop a comprehensive curb policy for properties adjacent to major roadways such as Routes 9 and 202." (35)*
- *"Other commercial uses along Route 9 and Route 202 south... include 2 new car dealerships, several gasoline service stations, antique shops, numerous auto repair shops, and several commercial gravel excavations." (63)*
- *Recommended zoning change: "Rezone the land currently owned by Hillsborough Ford (map11, lot 323) from Rural to Commercial." (64)*
- *"The location of the Commercial Zones in Hillsborough have been organized along Route 202 and Route 9, the main traffic thoroughfares." (67)*
- *"Three-phase power lines in Hillsborough are located in the following areas: South on Route 202 to Pherus Press." (99)*
- *"Until a few years ago the [stone] bridge across the Contoocook River on Route 202 was used by all traffic traveling Route 202. Today, a new bridge carries the traffic, but the remains of the stone bridge remain, and is used as a rest stop by some travelers." (106)*
- *"Other historical buildings: Sawyer "Twin" Bridge (off Route 202)." (106)*

Source: Town of Hillsborough Master Plan Update, December 1999.

Town of Antrim

Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *“Appoint a representative to any committee that may result from a proposed state and regional study of the Route 202 corridor” (8)*
- *“Install granite curbing, trees, and brighter, more closely spaced streetlights on Main Street from Pleasant Street to the Routes 31 and 202 intersection” (8)*
- *“Extend town sewer and water to encourage business development along Route 202 north downtown” (8)*

Source: Town of Antrim, NH Master Plan, Draft for Public Hearing, April 2000.

Town of Bennington

Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *Future Development Potential Map (25)*
 - *North of Route 47 and East of US 202 potentially suitable areas for development and West of US 202 recommended for protection*
 - *South of Route 47 and East of US 202 already developed and West of US 202 recommended for protection*

Town of Hancock
Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *“Protect and preserve the village center and the approaches to it from encroachment of business and commerce” (1)*

Source: Hancock Master Plan, Originally Adopted February, 1977, Latest Revision May 1997.

Town of Peterborough Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *“At this point it is anticipated that future development along Route 202 will not have individual entrances directly onto the highway, but to be in an industrial park type of configuration...” (14)*
- *“Actively support the eventual Route 202 Bypass project” (26)*
- *“Restrict on-street parking along Concord Street to alleviate traffic congestion and hazards along that stretch of Route 202” (26)*
- *“Tighter controls of the siting of buildings and parking lots, and better regulations for landscaping and buffering should help to gradually improve the visual quality of the Route 202 South strip” (51)*
- *“The East side of Route 202 South should be preserved in a greenbelt...” (52)*
- *“Establish a zoning district for Office Parks; rezone the land on Route 202 North near Scott-Mitchell Road and to the west of Route 202 South...” (68)*
- *“Tighter controls of the siting of buildings and parking lots, and better regulations for landscaping and buffering should help to gradually improve the visual quality of the route 202 South strip” (76)*

Source: Town of Peterborough Master Plan, Third Edition, March 1992.

Town of Jaffrey

Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *"Continue to work with NHDOT to assure implementation of the Route 202 improvement project for downtown Jaffrey" (5-15)*
- *"Maximize the potential improvement possibilities of proposed Route 202 intersection improvement project by integrating complimentary, local improvements with the proposed State improvements" (5-15)*
- *"Continue to work with NHDOT to have the second phase of the Route 202 improvement program...a.k.a. "The Through-pass" placed on the State's ten (10) year highway improvement program" (5-15)*
- *"The dog-leg section of Route 202 has been documented as the Town's worst and most pressing problem and the elimination of this problem should be a high priority" (5-29)*

Source: Jaffrey Master Plan, October 1990.

Town of Rindge

Future Land Use and Community Development Plans

- The local land use regulations are generally consistent with the Town's future land use and community development plans.
- Specific goals, policies and recommendations regarding US 202 have been developed by the Town.

Master Plan Proposals, Goals, Objectives, Policies and Recommendations Regarding US 202:

- *“Provide for the separation of through and local traffic wherever possible in order to facilitate movement both within Town and between neighboring municipalities” (6:4)*
- *“Provide for pedestrian walkways wherever warranted by vehicular traffic and other development activities” (6:4)*
- *“Continue to stress the desirability of locating future development in areas that are set back from state and local roads to minimize the problems associated with strip frontage development” (6:4)*

Source: General Development Goals and Objectives for the Town of Rindge, March 1990.

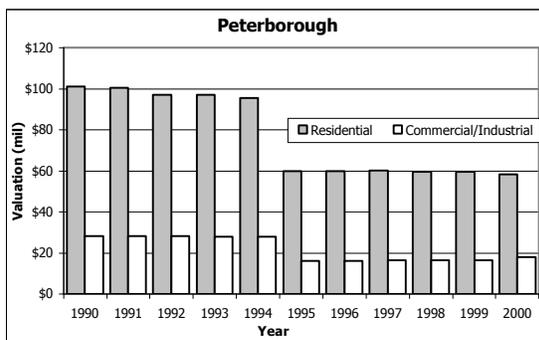
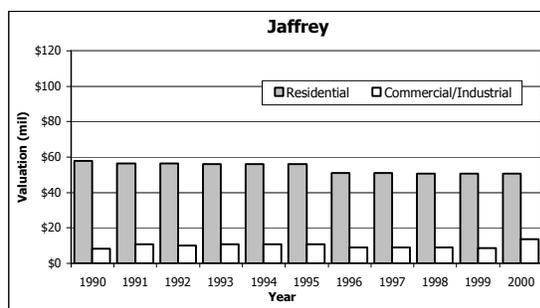
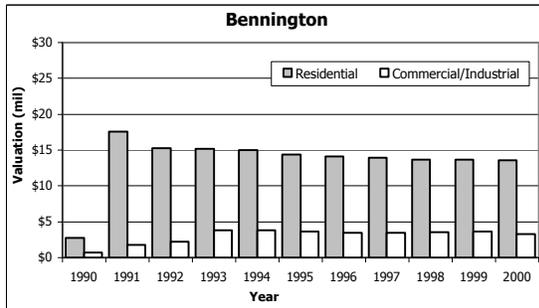
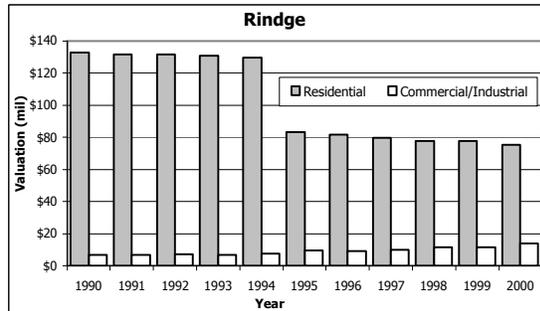
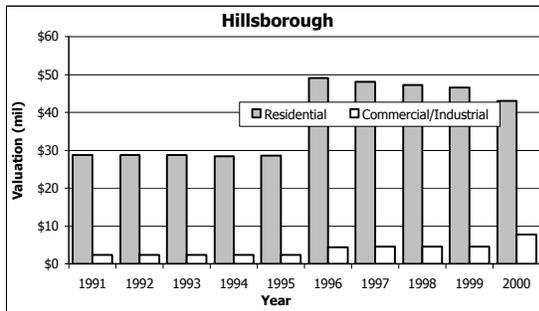
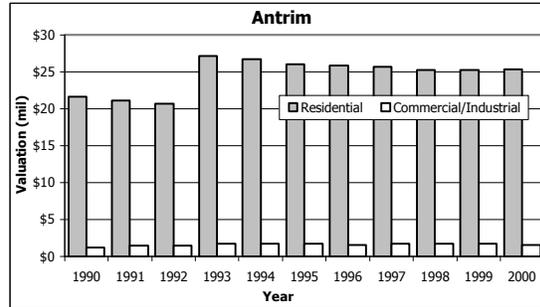
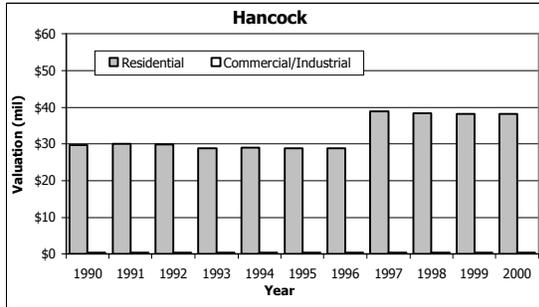
Demographic and Socio-Economic Data

The following pages present a graphical summary of the demographic and socioeconomic data collected in developing this report.

These charts are presented on the following pages:

- **Residential and Commercial/Industrial Net Assessed Land Valuations:** This page shows residential and commercial/industrial land valuations by Town. The Town of Peterborough is shown to have the lowest residential to commercial/industrial valuation ratio at 3:1, while Hancock has the Corridor's highest ratio at 108:1, or \$108 of residential valuation for every \$1 of commercial/industrial valuation.
- **Residential and Commercial/Industrial Net Assessed Building Valuations:** Similar to the above table with net assessed building valuations shown rather than assessed land valuations.
- **Population and Household Data:** These two pages show observed and projected population growth in the Corridor Towns from 1960-2020, household growth by Town since 1970, and person per household change by Town since 1960. The tables show steady growth in population and households and a steady decline in household size. In terms of annual percentage growth in population since 1960, Rindge leads the way with a 55% increase.
- **Income Data:** This page shows household income by Town for the period 1970-1990. In 1990, the highest household income in the Corridor was in Hancock with \$45,200, while the lowest household income was in Hillsborough with \$27,917.
- **Number of Jobs, Working Residents and Resident Workers:** This page provides a summary of the number of jobs by Town and related commuting trends to work.

Residential and Commercial/Industrial Net Assessed Land Valuations 1990-2000

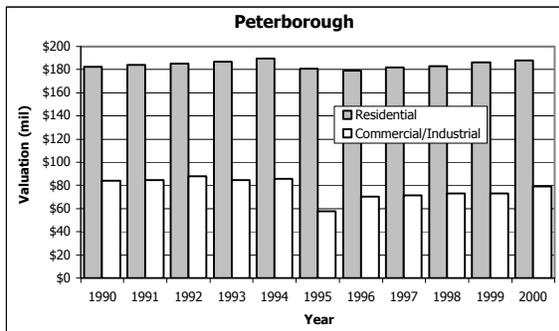
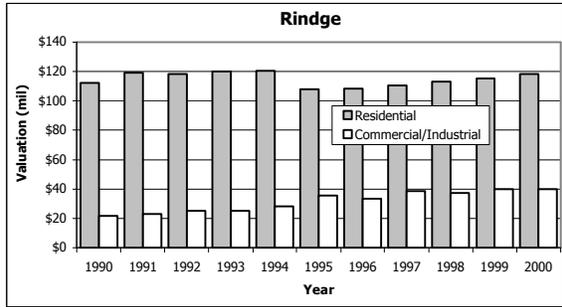
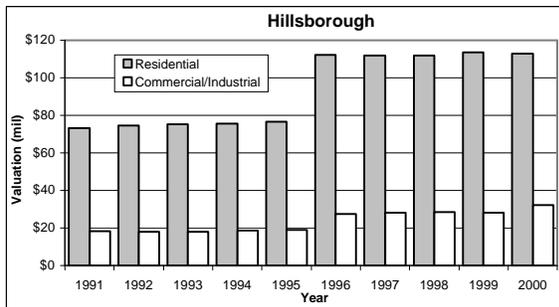
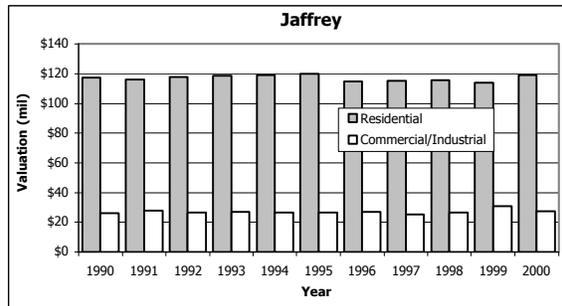
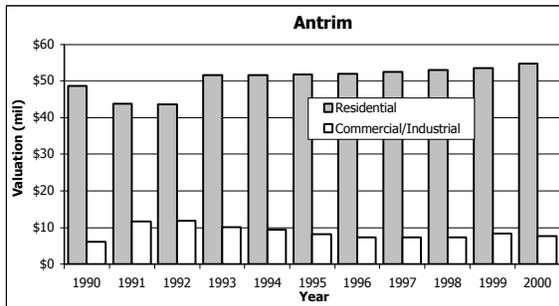
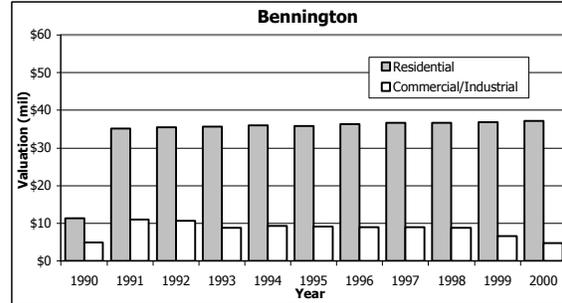
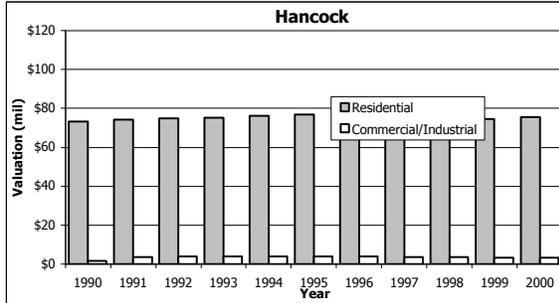


Ratio of Residential to Commercial/Industrial Land

	1990	1995	2000
Hancock	66:1	77:1	108:1
Antrim	18:1	15:1	16:1
Hillsborough	na	12:1	6:1
Rindge	19:1	9:1	5:1
Bennington	4:1	4:1	4:1
Jaffrey	7:1	5:1	4:1
Peterborough	4:1	4:1	3:1
Cheshire County	6:1	5:1	5:1
State	5:1	5:1	4:1
Hillsborough County	4:1	3:1	3:1

Source: Property Tax Tables by County, Dept of Revenue Administration, 1990-2000

Residential and Commercial/Industrial Net Assessed Building Valuations 1990-2000

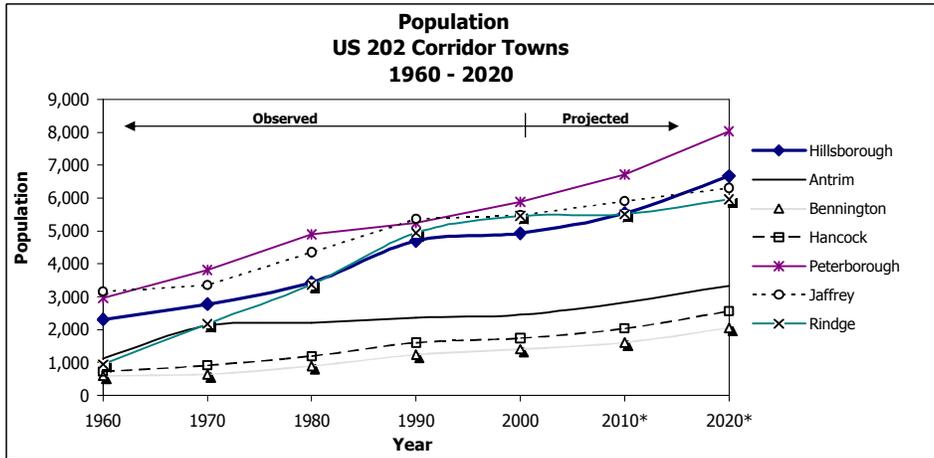


Ratio of Residential to Commercial/Industrial Buildings

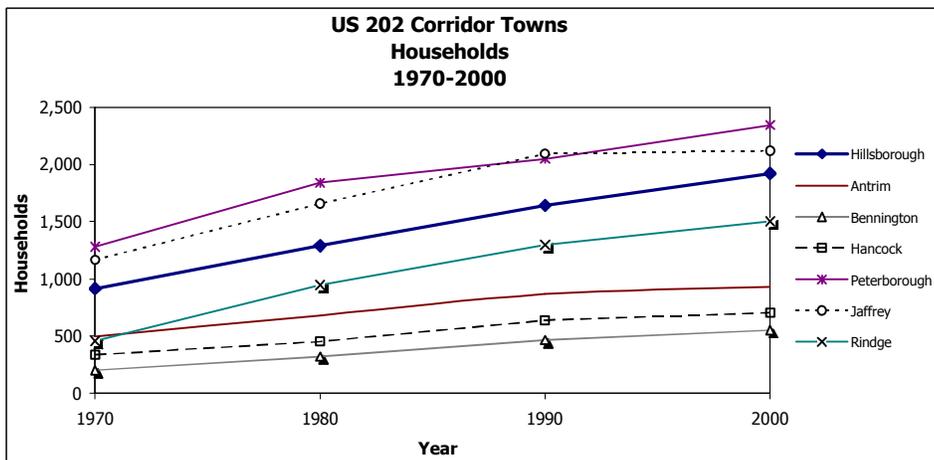
	1990	1995	2000
Hancock	47:1	20:1	23:1
Bennington	2:1	4:1	8:1
Antrim	8:1	6:1	7:1
Jaffrey	5:1	4:1	4:1
Hillsborough	na	4:1	4:1
Rindge	5:1	3:1	3:1
Peterborough	2:1	3:1	2:1
Hillsborough County	3:1	3:1	3:1
Cheshire County	4:1	4:1	4:1
State	4:1	4:1	4:1

Source: Property Tax Tables by County, Dept of Revenue Administration, 1990-2000

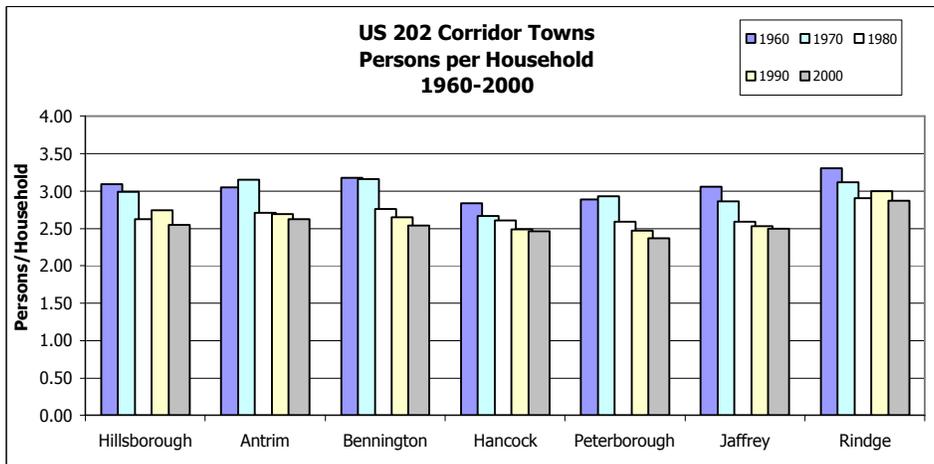
US 202 Corridor Study Population and Household Data



Source: US Census 1960, 1970, 1980, 1990, 2000
* = OSP Population Projections, 1997



Source: US Census 1970, 1980, 1990

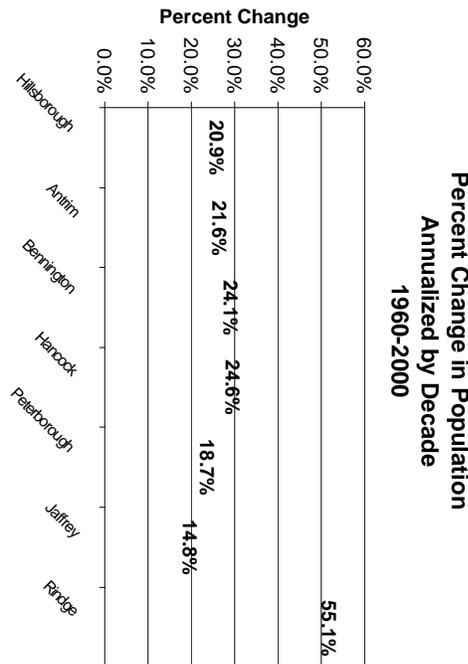
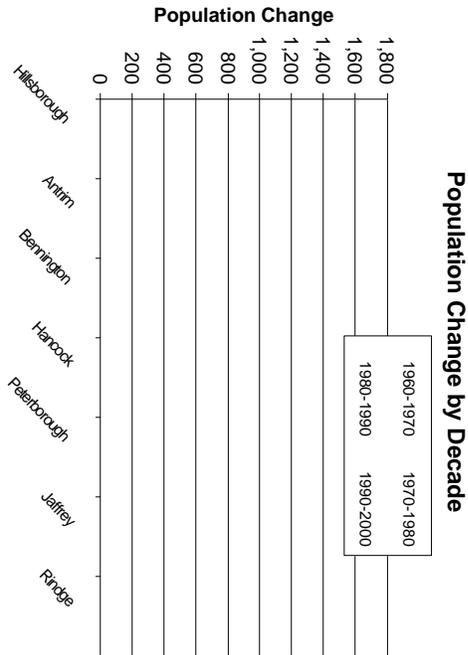


Source: US Census 1960, 1970, 1980, 1990, 2000

US 202 Corridor Study Population and Household Data

	Population					Population Change					Annual Decade Percent Change
	1960	1970	1980	1990	2000	1960-1970	1970-1980	1980-1990	1990-2000	1960-2000	
Hillsborough	2,310	2,775	3,437	4,698	4,928	465	662	1,261	230	2,618	20.9%
Antrim	1,121	2,122	2,208	2,360	2,449	1,001	86	152	89	1,328	21.6%
Bennington	591	639	890	1,236	1,401	48	251	346	165	810	24.1%
Hancock	722	909	1,193	1,604	1,739	187	284	411	135	1,017	24.6%
Peterborough	2,963	3,807	4,895	5,239	5,883	844	1,088	344	644	2,920	18.7%
Jeffrey	3,154	3,353	4,349	5,361	5,476	199	996	1,012	115	2,322	14.8%
Rindge	941	2,175	3,375	4,941	5,451	1,234	1,200	1,566	510	4,510	55.1%
Cheshire Co.	43,342	52,364	62,116	70,121	73,825	9,022	9,752	8,005	3,704	30,483	14.2%
Hillsborough Co.	178,161	223,941	276,608	336,073	380,841	45,780	52,667	59,465	44,768	202,680	20.9%
State Total	606,400	737,681	920,610	1,109,252	1,235,786	131,281	182,929	188,642	126,534	629,386	19.5%

Source: US Census 1960-2000.



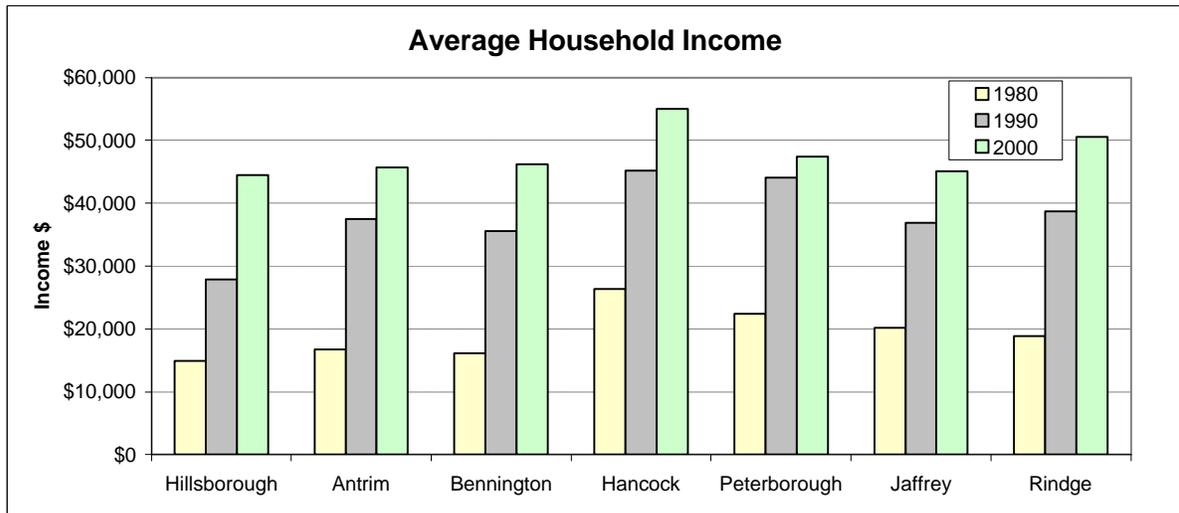
US 202 Corridor Study Income Data 1970-2000

1970 Family Income	Hillsborough	Antrim	Bennington	Hancock	Peterborough	Jaffrey	Rindge
Less than \$5 000	93	92	38	20	99	135	47
\$5 000 - \$9 999	364	141	59	118	316	346	137
\$10 000 - \$14 999	201	150	41	69	269	287	115
\$15 000 - \$24 999	84	35	44	32	161	94	48
\$25 000 - \$49 999	5	14	0	21	41	42	20
\$50 000 and above	0	0	0	0	13	0	0
Average Family Income	\$9,370	\$8,844	\$9,812	\$9,777	\$10,718	\$9,670	\$9,976

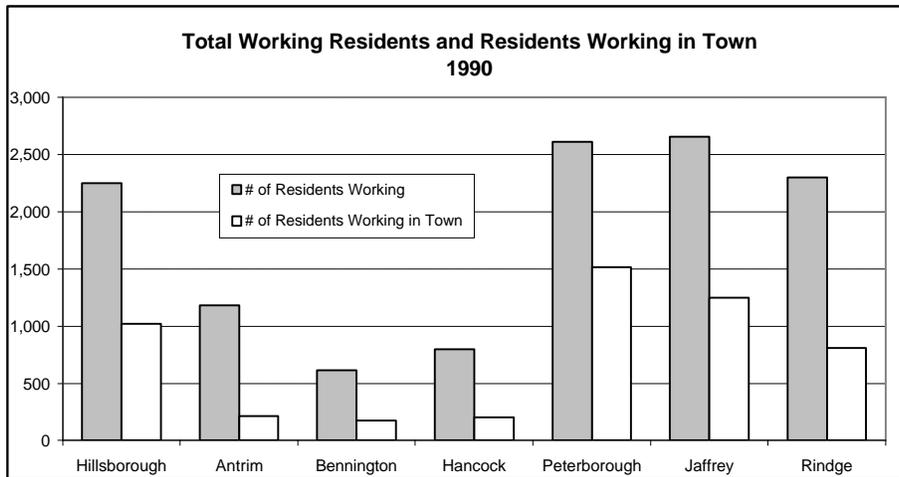
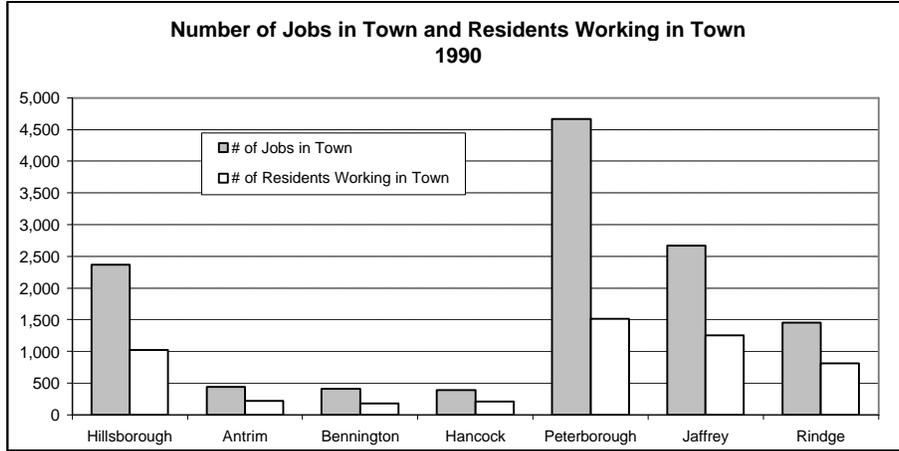
1980 Household Income	Hillsborough	Antrim	Bennington	Hancock	Peterborough	Jaffrey	Rindge
Less than \$5 000	164	34	13	12	70	57	17
\$5 000 - \$9 999	253	58	55	26	87	168	82
\$10 000 - \$14 999	203	105	55	42	205	197	130
\$15 000 - \$24 999	172	184	73	104	388	425	264
\$25 000 - \$49 999	258	101	52	113	411	295	191
\$50 000 and above	12	8	3	46	100	38	26
Avg Household Income	\$14,966	\$16,699	\$16,111	\$26,340	\$22,362	\$20,206	\$18,929

1990 Household Income	Hillsborough	Antrim	Bennington	Hancock	Peterborough	Jaffrey	Rindge
Less than \$5 000	37	42	13	16	42	49	26
\$5 000 - \$9 999	136	53	36	28	85	158	59
\$10 000 - \$14 999	91	58	33	41	115	171	86
\$15 000 - \$24 999	256	108	92	72	348	347	231
\$25 000 - \$49 999	778	421	188	244	716	763	637
\$50 000 and above	346	251	105	236	771	546	389
Avg Household Income	\$27,917	\$37,500	\$35,600	\$45,200	\$44,100	\$36,900	\$38,700

2000 Household Income	Hillsborough	Antrim	Bennington	Hancock	Peterborough	Jaffrey	Rindge
Less than \$10,000	124	119	38	33	113	149	49
\$10 000 - \$14 999	134	56	27	16	98	73	29
\$15 000 - \$24 999	263	79	49	63	328	302	121
\$25 000 - \$49 999	548	254	187	201	696	719	542
\$50 000 and above	849	417	246	383	1111	870	773
Avg Household Income	\$44,500	\$45,677	\$46,150	\$55,000	\$47,381	\$45,033	\$50,494



Number of Jobs, Working Residents and Resident Workers US 202 Corridor Towns 1990



Municipality	# of Jobs in Town	Estimated # of Residents Working	# of Residents Working in Town
Hillsborough	2,366	2,249	1,019
Antrim	437	1,182	214
Bennington	409	611	175
Hancock	388	796	206
Peterborough	4,666	2,612	1,514
Jaffrey	2,674	2,652	1,249
Rindge	1,452	2,299	809

PART 3. RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS ARE OUTCOMES OF THE STUDY WHICH CAN DRIVE FUTURE PLANNING AND ACTION, AND COLLECTIVELY FRAME CORRIDOR MANAGEMENT, FOR US 202 FROM RINDGE TO HILLSBOROUGH IN THE COMING YEARS.

Recommendations presented here represent a snapshot in the larger process. Following research and public involvement summarized in Part 2, this chapter presents technical and policy directions proposed to respond to identified problems. These recommendations vary from requests for specific highway improvement projects to a review of local zoning and site standards. Some of the strategies described in this section may require further coordination among municipalities, regional, state, and federal agencies in order to implement.

Recommendations are presented in the following categories:

- **HIGHWAY CONSTRUCTION** projects
- **TRAFFIC CALMING** to manage speed and improve pedestrian access
- **ACCESS MANAGEMENT** between the highway and private properties
- **NEXT STEPS** to develop and implement corridor management

The Corridor Management process will continue with coordination among local officials, the regional planning commissions, NH DOT, and others in developing measures to enact the recommendations included here to the extent possible. It must be acknowledged that the scope of actions provided here is considerable, ranging from the application of existing policy and technology to a request for further assessment and clarification of these policies.

HIGHWAY CONSTRUCTION

Following is a description of general support for the design and implementation of highway improvements in corridor towns, principally to protect public safety and community character:

Antrim

The Town has committed to a long-term program of aesthetic and functional improvements to Main Street as part of public efforts to revitalize and preserve the downtown as a social and economic center. The first major element of this work is the Antrim Main Street Rehabilitation Project which is scheduled for construction in 2005. The project was approved for funding under New Hampshire's Transportation Enhancement Program in 2002. The project will formalize traffic circulation, pedestrian circulation and parking on Main Street and include rehabilitation of storm sewers, sidewalks along US 202; and the installation of landscaping, lighting and other aesthetic amenities. Estimated cost: \$423,000.

Bennington

Local officials have requested assistance from the State to alleviate a safety hazard at the intersection of US 202 and Main Street near Monadnock Paper Mills. Today the intersection lacks a protected southbound left-turn lane and northbound right-turn slip lane, and in the winter snow banks impinge on sight distance for traffic entering US 202 from Main Street.

Peterborough

1) Reconstruction of 2 miles of US 202 between Southfield Lane and the Hancock town line is under design and scheduled for construction in 2004. Construction cost estimate: \$5.2 million.

2) Municipal staff have recommended action on certain elements of the report: "Traffic Study and Modeling at 15 Intersections in the Town of Peterborough, New Hampshire", December 4, 2001 by Edwards and Kelcey, Inc., regarding US 202 as follows:

- US 202 at NH 101 and Grove Street – Minimize duration of all phases of the signal cycle to minimize traffic queue length and delay time.
- US 202 at Grove Street Extension and the Monadnock Plaza Entrance – Relocate the Plaza Entrance to create a four-way, right-angle intersection with Grove Street Extension and provide sidewalks and crosswalks (ADA accessible). Cost estimate: \$175,000.
- US 202 and NH 101 at the Peterborough Plaza Entrance – Provide a right-turn slip lane for eastbound traffic from US 202 into the Plaza entrance. Cost estimate: \$50,000.
- US 202 at Sand Hill Road – Provide a right-turn slip lane for northbound traffic from US 202 onto Sand Hill Road. Cost estimate: \$110,000.

- US 202 at NH 136 – Provide a right-turn slip lane for northbound traffic from US 202 onto NH 136.
- US 202 at Hunt Road – Restripe US 202 to provide an exclusive northbound left-turn lane onto Hunt Road. Increase the radii of the corners of Hunt Road at US 202 to better accommodate trucks. Stripe Hunt Road for crosswalk and center line. Cost estimate: \$26,000.

3) There are long-standing and varied concerns about US 202 through Peterborough by way of Concord and Granite Streets; including the intersection of Main, Concord and Granite Streets; and the retaining wall below Granite Street above the Contoocook River. There is a \$4.2 million “set aside” in the State’s 10-Year Transportation Improvement Program for as-of-yet unspecified improvements to US 202 from NH 101 to Sand Hill Road. Improvement projects will be sought to alleviate observed negative impacts to community character and restricted traffic circulation.

Jaffrey

1) There is a prevailing interest in changing traffic patterns in downtown Jaffrey to accommodate future downtown development. As an award winning NH Main Street community, the town is undertaking planning and actions to revitalize the downtown as a commercial district. The dominating negative effect of traffic on downtown life has been identified as a critical barrier to revitalization. The August 2002 report “Jaffrey Visioning Study Status Report”, prepared by Sherman Grenier Halle, Ltd. proposes options for change which may involve changes to US 202, NH routes 124 and 137, and local streets including Stratton Road and Blake Street. That report proposes exploring three alternatives:

- Eliminate access to Stratton Road and Blake Street at the five-way intersection of US 202 north and south, NH 124, Stratton Road and Blake Street – creating a “T” intersection of US 202 north, US 202 south/NH 124 west, and NH 124 east.
- Create a one-way, counter-clockwise loop by building a new road (bridge) connecting US 202 and NH 137 on the north side of the Mill complex.
- Construct a roundabout at both the US 202/NH 124/NH 137 intersection and the US 202/NH 124 intersection (eliminate access to Stratton Road and Blake Street).

At the time of this publication, personnel from NH DOT, SWRPC and the Town of Jaffrey have begun to explore the limits and possibilities of these options.

2) The Downtown Pedestrian Enhancement Project is scheduled for construction in 2004. The project was approved for funding under New Hampshire’s Transportation Enhancement Program in 2000. The project will better define and protect pedestrian circulation and parking on Main Street and include rehabilitation of sidewalks, installation of “brick stamped” crosswalks, and the installation of landscaping, lighting and other aesthetic amenities. Estimated cost: \$175,000.

Rindge

Local officials are interested in working with NH DOT to allow the US 202 right-of-way to provide a roadside forested buffer through town.

Corridor-Wide

There are several other areas in the Corridor with severe accidents or high numbers of other reportable accidents for which specific projects have not been defined, but, which might be improved with access management techniques, including driveway consolidations or restricting turning movements (e.g. right in, right out only designations), or roadway improvements (e.g. shoulder widening):

- The intersection of US 202 and Forrest Road in Hancock;
- Approximately one mile of US 202 in North Peterborough between Southfield Lane and NH 136;
- Approximately one mile of US 202 in Jaffrey from the intersection of Pierce Crossing Road south to the intersection with Hillcrest Road; and
- Approximately one-half mile of US 202 in West Rindge from the intersection with NH 119 north beyond the intersection with Goodall Road. This road segment has a relatively low number of accidents, but the existing development and access patterns there may impose a more serious restriction under higher traffic volume in the future if unchanged or intensified.

Local officials are encouraged to discuss concepts for improving parking, local traffic circulation, including pedestrians and bicyclists in village areas with their planning commission and NH DOT staff. The State of New Hampshire's Transportation Enhancement Program can provide funding for innovative, low-tech projects that can greatly enhance the non-motorists' safety and experience in village areas under the influence of a major highway.

TRAFFIC CALMING

Variations in traffic speed and flow densities observed on US 202 are associated with a complex interactive set of variables which include roadway geometry, roadside development patterns, types of trips, types of vehicles, driver expectations, and posted speed limits. Measures to reduce maximum speeds and promote a more uniform flow of traffic are sought for the US 202 Corridor. Local, regional and State planners are encouraged to explore the set of techniques available for urban and suburban settings – collectively known as traffic calming – for adaptation to the village main street and even the open road.

Traffic calming measures range from enhanced enforcement of traffic laws to concepts for roadside landscaping and roadway design. A basic element of traffic calming is the use of a visual environment to which drivers subconsciously respond with slower speeds, an environment that makes implicit that the rules of the open highway do not apply. Such an environment is typified by vertical landscape elements such as trees or fences nearer to the roadside and requires vehicles to negotiate gentle deviations from a straight path, while providing explicit pedestrian right-of-ways.

A particular challenge for designing traffic calming for the open road is the management of drivers' expectations for travel across a region on a major highway. And, herein is the basis of an often expressed concern: traffic on US 202 travels the main streets of Antrim, Peterborough, Jaffrey, and West Rindge at inappropriate speeds. A goal of this recommendation is to create an environment to slow high speed traffic throughout the corridor and promote the calm uniform flow of traffic through settled areas.

Traffic calming techniques are found to mitigate negative impacts of start-and-stop traffic, mixed speed traffic and high speed traffic. The benefits of traffic calming include:

- safely integrate pedestrians and bicyclists;**
- reduce traffic accidents involving vehicle, pedestrians, bicycles, and other property damage;**
- reduce vehicle emissions: noise, exhaust, dust, road spray; and**
- relieve intersection congestion**

Following are potential areas of interest for implementation of traffic calming in the US 202 Corridor:

- Preserve or create wooded buffers to mitigate noise and emissions, preserve rural character, and provide a vertical landscape element near the roadside to control driver speed. This measure can support bicycle and pedestrian movement.
- Traffic calming measures for downtown Antrim, Peterborough, Jaffrey, and West Rindge to slow traffic and more safely integrate pedestrian and bicycle movement.
- Enhanced speed enforcement and the use of technology to enhance driver awareness of vehicle speed and speed limits, such as automated radar speed monitoring and driver alert machines.
- Pursue the use of the NH Cultural and Scenic Byways program for US 202.

LAND USE REGULATION AND POLICY

Local officials are encouraged to review the results of the GIS development potential modeling component of this Study as a basis for discussion and review of local zoning. Review of current zoning to confirm consistency among local development goals, intended effects of current zoning standards and the possible development consequences of the interaction of existing land use, landscape characteristics and zoning standards may reveal opportunities to strengthen local control over future development patterns.

The use of access management tools in local zoning and site standards is encouraged. Highway and site design standards have been developed by planners and transportation engineers to reduce the debilitating effects of frequent or poorly defined driveways (particularly commercial driveways) and the encroachment of buildings, commercial signs and on-site traffic on the public right-of-way.

Local officials of several of the US 202 municipalities have expressed interest in developing a Memorandum of Understanding with NH DOT regarding the use of access management. Such an agreement might articulate the town's policies for the use of access management and the town's desire to coordinate local implementation of that policy with NH DOT driveway permitting activity.

There is also an interest among US 202 Corridor local officials to work with the regional planning commissions and US 202 to revisit the State's driveway permitting criteria, with particular interest in development policy and standards for preserving rural arterial and major collectors. Concern has been expressed about an observed transition from rural to urban driveway densities at the periphery of urban and village areas which confounds efforts to preserve the benefits of arterial capacity.

ACCESS MANAGEMENT TECHNIQUES – extracted from the NH DOT Route 16 Corridor Study

1. Distance Between Driveways

Requiring a minimum distance between driveways limits the number of access points that a driver must be aware of and reduces the opportunities for conflicts between turning vehicles and through traffic. This issue can be addressed in Subdivision and Site Plan Review regulations with a requirement that links the distance between driveways to the posted speed limit of the adjacent road.

MINIMUM DISTANCE BETWEEN DRIVEWAYS	
Posted Speed Limit	Minimum Spacing
35 mph	150 feet
40 mph	185 feet
45 mph	230 feet
50 mph	275 feet

Source: "Access Management for Streets and Roads" Federal Highway Administration, 1982, as adapted by Route 16 Corridor Study.

2. Corner Lot Access

Access from corner lots should be from adjacent collector or local roads, not the adjacent arterial. Planning Boards should incorporate this requirement into both Subdivision and Site Plan Review regulations. This regulation could be waived in situations where the applicant can demonstrate that such an access to the site is unsafe, would not function properly or is not possible due to some physical characteristic of the parcel.

3. Number of Driveways per Lot

Reducing the number of accesses to arterials reduces the number of conflict points for vehicles and gives drivers a greater opportunity to react to vehicles entering and exiting the road. This issue can be addressed in the Zoning Ordinance, Subdivision Regulation and Site Plan Review regulations. In the Zoning Ordinance a town can adopt an overlay district limiting the number of driveways per parcel. Subdivision regulations can require that access to arterials be combined wherever possible at the time of subdivision. Site Plan Review regulations can limit the number of accesses along specified arterials.

4. Shared Driveways

Combined access points for residential and non-residential sites reduces the number of points where turning vehicles and through traffic conflict. A single access point can easily serve two lots, and can occasionally serve three or more parcels. Planning Boards should include a provision in their Subdivision and Site Plan Review regulations requiring shared driveways on selected roads in their community. The provision should include requirements for the necessary easements and maintenance agreements. This regulation could be waived if the applicant demonstrates that a shared driveway is unsafe or not feasible because of the geometry of the site.

5. Interconnections Between Developments

Interconnected non-residential sites allow employees and customers to move from site to site without repeatedly entering and exiting the arterial. Site Plan Review regulations should include language requiring developers to provide an easement across their property to an adjacent site. When the adjacent site is eventually developed, the easement can be used to connect the two sites with a service road and pedestrian facilities allowing customers to move from site to site on foot or in their vehicle. Subdivision regulations should require that developers connect to adjacent development roads, or require that a right of way be provided to the adjacent site, so a connecting road can be constructed when the neighboring lot is developed. Permanent cul-de-sacs and “single point of entry” developments should be discouraged.

6. Driveway Throat Length

Non-residential driveway entrances should be designed to prevent vehicles on the arterial from backing up while waiting to access the site. Providing adequate depth, or “throat length”, at the driveway entrance, provides vehicles with sufficient maneuvering space on-site to move away from the entrance and allow other vehicles to efficiently enter or exit the site. Throat length is an issue that can only be addressed as part of Site Plan Review. Based on the results of a traffic impact study, an appropriate throat length can be designed to meet the specific needs of the proposed use and the adjacent arterial. Local Site Plan Review regulations should require that a traffic impact study be completed for developments that will generate high traffic volumes.

7. Right Turn Deceleration/Acceleration Lanes and Tapers

Right turn lanes and tapers remove turning and slow moving vehicles from the travel lane of the arterial. The need for such lanes is generally determined through information provided in a traffic impact study showing the effect of the development on the level of service of the arterial. The length and type of turning lane necessary are a function of the proposed use and volume of traffic on the arterial. Both Subdivision and Site Plan Review regulations should include the provision for requiring a traffic impact study and the mitigation of off-site traffic impacts.

8. Left Turn Pocket

A left turn pocket allows left turning vehicles to move out of the through lane thereby reducing conflicts between through traffic and turning traffic. The pocket provides storage for a number of left turning vehicles depending on the demand created by the site. A traffic impact study will help determine if a left turn pocket is necessary and how much storage the pocket should provide.

9. Driveway Material and Opening

In situations that do not warrant a full right or left turn lane, simple, comparatively inexpensive driveway design methods can minimize the effect of an access on the adjacent arterial. Paved driveways allow vehicles turning off an arterial to exit the road more quickly than unpaved driveways. Site Plan Review regulations should be designed to ensure that new driveways and sites undergoing a change of use provide the maximum safety for turning vehicles and maintain or improve the level of service of

the arterial. In cases where a site with uncontrolled access is being redeveloped, creating a definable driveway entrance should occur.

10. One-Way In/One-Way Out

Separating traffic entering a site from traffic exiting a site may best serve a site's on-site traffic flow needs while still minimizing the effects of two accesses to a site. This provision can be included in Site Plan Review regulations for non-residential sites.

11. Frontage/Service Road

Frontage roads are fairly uncommon in New England, but they can be a valuable tool for reducing accesses to an arterial. A frontage road is directly adjacent to and parallels the arterial. Residences and businesses access the frontage road, rather than the arterial, which intersects the arterial at two or three points.

12. Turning Radius

A large turning radius allows vehicles to make a turn at a higher speed thereby removing turning vehicles from the road more quickly. A large radius also allows vehicles entering an arterial to accelerate more rapidly. This requirement is most useful for non-residential uses and can be incorporated into a community's Site Plan Review regulations.

13. Signs

Proper signage at driveway entrances, and the avoidance of sign clutter can assist travelers using the arterial to identify the site they are trying to find and properly identify the entrance to the site. While this is an access management technique, it is best incorporated into a community's sign regulations. A reduction in sign clutter and distraction can be accomplished by limiting the size, material, illumination, location, and number of signs allowed on each lot. The height, number, type and location of signs can affect the function of an access. Signs that obscure the view of an access, multiple signs, and signs with too much information should be avoided when possible. The legal aspects of regulating signs and sign content should be fully understood and regulations should be reviewed by an attorney.

14. Corner Clearance

Accesses to a corner parcel should be far enough from the intersection of two roads that vehicles using the driveway do not interfere with the function of the intersection. Assuming a 30 mph operating speed, the ideal minimum corner clearance from a signalized arterial is 230 feet. The ideal minimum corner clearance for a stop sign controlled intersection is 115 feet. For rural and other high speed roads, clearances of 460 ft. from signalized intersections and 230 ft. from stop sign controlled intersections should be maintained.

15. Medians

The placement of raised medians along busy and developed or developing sections of an arterial road is an effective way to prevent left turning traffic entering or exiting a development. This reduces the number of potential conflict points for users of the road making the road safer and more efficient. A traffic impact study done as part of a site plan or subdivision proposal should provide the necessary information to determine if a median is warranted. Medians are particularly common near busy intersections to prevent confusing and dangerous situations if too many busy accesses are located in close proximity to each other.

16. Signalization

Busy accesses on arterial roads sometimes require signalization to ensure that the intersection does not present a hazard to the people using it. This is a requirement that must be evaluated by an engineer based on a thorough traffic impact analysis study. An access that might require signalization will also be undergoing the professional scrutiny of the NH DOT. A community's Site Plan Review regulations should inform applicants that signalization is a possible requirement of the planning board, but the board should work closely with the NH DOT and its own engineering professionals.

Next Steps

This Report documents baseline conditions and sets policy directions for corridor management of US 202 for the coming years. The publication of this Report precludes neither the development of further recommendations at local or regional levels nor further research or refinement of analyses used in the Study.

The regional planning commissions will continue to work with local officials to act on the recommendations. Workshops are anticipated for the topics of: access management, traffic calming, speed enforcement, preservation of roadside forests, and the NH Scenic and Cultural Byways Program. Speed enforcement, attention to construction projects and preservation of the rural character of the corridor are nearly universal areas of interest among the corridor towns. This last interest can be addressed with a combination of strategies: access management, preservation of roadside forest (buffers), support of pedestrian and bicycle access and possibly implementation of the NH Scenic and Cultural Byways Program.

Issues for Further Consideration

	Rindge	Jaffrey	Peterborough	Hancock	Antrim	Hillsborough
Construction Projects	■	■	■	■	■	■
Access Management	■	■	■	■	■	■
Traffic Calming	■	■	■	■	■	■
Speed Enforcement	■	■	■	■	■	■
Heavy Trucks	■	■	■	■	■	■
Roadside Buffers	■	■	■	■	■	■
Bicycles & Pedestrians	■	■	■	■	■	■
Stormwater Runoff	■	■	■	■	■	■
Scenic Byways	■	■	■	■	■	■

In order to move forward with the recommendations herein and the refinement of a corridor management strategy, cooperation among municipalities, NH DOT and regional planning commissions is essential. The following table identifies roles and actions for these partners, and others.

Policy and Design Involvement

Recommendation	Towns	RPCs	NH DOT	Action	Other Agencies
Construction Projects	■	■	■	Define, Schedule in TIP, Design & Build	
Access Management	■	■	■	Integrate with Local Zoning & Site Plan	
NH Driveway Permits	■	■	■	Access Management MOU with NH DOT; Examine NH Permit Criteria regarding preservation of functional classification	
Traffic Calming	■	■	■	Adapt Urban/Suburban Concepts to Village and Open Road environments; May involve consideration of Federal and State convention and work in concert with Scenic Byways program	FHWA
Speed Enforcement	■	■	■	Develop and fund enhanced program	NH DOS
Routing of Trucks		■	■	Discussion of public activity to manage truck routing and speeds.	
Roadside Buffers	■	■	■	Develop local or State level program to develop easement opportunities; Mobilize funds for easement acquisition; seek easement donations	Private Land Trusts
Bicycles & Pedestrians	■	■	■	Community planning to identify desired access; Coordinate with Traffic Calming; Investigate local, state and federal funding	NH DRED
Stormwater Runoff	■	■	■	Investigate opportunities and need for stormwater containment and treatment	NH DES NRCS UNH
Scenic Byways	■	■	■	Investigate applicability and desirability of Program for Corridor towns	NH OSP NH DHR