LONDON LONG TERM TRANSPORTATION CORRIDOR PROTECTION STUDY

DRAFT EXECUTIVE SUMMARY

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1. STUDY PURPOSE

The main purpose of the London Long Term Transportation Corridor Protection Study (LTCP) was to identify and protect roadway corridors required to address the City's long term transportation needs. Future growth, vitality and livability of the City could be jeopardized if sufficient land is not protected to accommodate expansion of the transportation network. The study generated much public discussion and debate about the future of transportation in London, and was guided by three basic study principles:

Principle #1: This is a long term planning study, and is not based on London in 2001. Transportation and land use conditions have been evaluated in the context of the long term future when land use, city form and some roadway corridors will have changed dramatically compared to today.

Principle #2: This is a land corridor protection study, not a roadway engineering study. It focuses on land protection to provide the City with needed transportation corridors, and not the building of roadways or other transportation facilities. Construction of roadways within protected transportation corridors will follow short term master plans, environmental assessments and engineering designs, all requiring public consultation and Council approval.

Principle #3: While this study was not intended to specifically analyze alternative transportation modes (i.e. transit, cycling), the protected corridors will be available for a variety of transportation modes and systems in the future, ranging from roadway lanes for autos and public transit, through to High Occupancy Vehicle (HOV) lanes, bus lanes, Light Rail Transit (LRT), bikeways and sidewalks where required and feasible in London.

2. EXISTING TRANSPORTATION INFRASTRUCTURE

Existing transportation infrastructure in London is characterized by:

- A grid of limited capacity two and four lane arterial streets intersected by major environmental features (i.e. rivers and creeks) and rail lines, traversing residential and non-residential areas from the core to suburban growth areas;
- A conventional transit system based on scheduled service;
- A bikeway network of primarily off-road recreational cycling routes, with some separated bike paths within the road right-of-way (i.e. Wonderland Road), and;
- A pedestrian system of sidewalks associated with the roadway system, plus walking trails primarily for recreation.

3. PUBLIC ATTITUDE SURVEY

In order to gauge public opinions before starting the technical analysis, an independent telephone survey of 203 London and area household was conducted for this study from May 11-24, 2000. Survey results are summarized as follows:

What mode of transportation was used the most:

70% Drive Auto 15% Auto Passenger 9% Transit 6% Bicycle.

What's the major transportation issue facing London (unaided responses - only answers above 10% are noted here):

Congestion 17% Street Repair 15% Inadequate Transit System 10%

Unaided mention of the most important changes that could be made to London Roadways (only answers above 10% are noted here):

42% add ring road or expressway 25% repair roadways 24% widen streets.

What would prompt you to reduce your auto use:

1. financial support to use alternative mode
2. improve transit service
3. increase vehicle operating cost
4. let traffic congestion increase
5. increase parking cost

Support for management of future transportation requirements:

1. build new major roadways around London
2. encourage more use of alternatives to the car
3. widen existing roadways
4. build missing links in the street system
5. build new major roadways through London.

4. CITY GROWTH

4.1 Amount of Growth - The overall goal of this long term planning is to minimize the risks facing London in providing a full array of transportation modes and services as it continues to grow. The City's Official Plan transportation policies already designate all arterial roadways as potential six lane facilities. Providing this roadway capacity will be difficult, or undesirable along certain roadway sections owing to major constraints such as land use proximity, heritage features, topography or environmental sensitivity. In addition, the pace of City growth and redevelopment does not allow the City to acquire, through the land development process, continuous sections of land for needed transportation network expansion.

London's future transportation needs will be largely influenced by where and how the City grows. Population and employment growth will create more demand for trip-making within the City. City estimates show that, based on land availability, environmental constraints, land serviceability and planning policies within the existing City boundary, London has a 'full build-out" capacity to hold a doubling of its current population to 675,000 people, and double employment to 357,000 jobs.

4.2 Location of Growth - Where London grows will be affected by existing land use patterns, land and servicing availability and environmental constraints. These are all expected to combine into a London growth pattern directing most population growth to west and north London, and most employment growth to east London, the core and

along the 401/402 corridor. Some population growth is also expected in central London as a result of land redevelopment and intensification.

The relationship between this City growth and future transportation needs has generated public discussion during the study. Therefore, it should be stressed that the location and type of full build-out growth in London was based on many existing London Official Plan policies that encourage urban growth management, discourage suburban sprawl and provide incentive for intensification in the City. All of these progressive policies are also associated with new "Smart Growth" concepts for mid-sized North American cities, for example:

- "Intensified" development of vacant and underused lands will only occur in existing built-up areas of the City – 50% in central London communities – the rest spread through the existing urbanized area;
- This intensification of the existing urban areas is expected to account for 10% of all new low density housing – 20% of all new medium density housing and 40% of all new high density housing;
- The majority of population growth will occur through major suburban expansion in the north and west areas.
- The average number of people per dwelling unit is expected to decrease from today's 2.43 people/unit, to 2.3 in the long term;
- The Full Build-Out employment forecast was decreased by 20% to represent the trend towards more people working at home and telecommuting.

4.3 Growth Implications and Opportunities - Forecasting when this full build-out growth will occur depends on many local, national and international factors, and so has not been attempted in this study. The more important question facing London is what kind of transportation network will this future City need, compared to today's network, as it grows towards the build-out population. It is suffice to say that this future city is at least 30 years away, so one can look back to the London of 1970 or 1960 to see the types of changes that happened in the City and its transportation systems over time. For example, significant growth has occurred in north London, with associated changes to the character and function of Fanshawe Park Road from a cross-town highway to an integral inner-city arterial route. The question is whether London currently has sufficient transportation corridor infrastructure to meet its next series of long term transportation needs, once again through a variety of modes and services.

At full build-out, London's long term growth is also expected to provide new transportation opportunities not available or achievable in a city of 330,000 people. London will have the size and density, at least in some areas such as the inner city, to offer the types of more "enhanced" transportation services and associated auto reduction programs offered in larger Canadian cities, including HOV lanes, express transit corridors, major ride-sharing programs, transit-supportive core area parking management and Light Rail Transit (LRT). More intensive and mixed-use inner city redevelopment will also increase the attraction of cycling and walking as the mode of choice as trip distances decrease.

5. FUTURE TRANSPORTATION SYSTEM NEEDS

The City of London at full build-out will require transportation system capacities and services not available today. The City's traffic forecasting model was used to identify the location of these resulting system needs in five steps:

1. Input the future build-out population and employment forecasts into traffic zones;
2. Have the model forecast the traffic volumes and patterns on the existing roadway network resulting from this growth;
3. Compare these future traffic volumes with existing roadway design capacities to show where capacity deficiencies can be expected. Design capacity is measured by the number of vehicles per hour a roadway can accommodate at a desired level of service, (i.e. 900 vehicles per lane per hour on a major arterial roadway such as Wonderland Road at level of service "E");
4. Document where this future traffic volume is expected to exceed existing roadway capacity, resulting in excessive congestion, and;
5. Translate the congestion to additional travel lane needed to solve the congestion.

The City's targeted 15% reduction in single occupant vehicles (SOV) is included in these forecasts, meaning a shift towards more ridesharing, and increased use of transit, cycling and walking. The resulting forecasts show that at full build-out, most transportation network deficiencies in London, measured by number of required travel lanes, will occur in the north-south direction in the inner City between Wonderland Road and Highbury Avenue. This is the highest density part of the City, it includes the downtown and has increased density potential through redevelopment and intensification within the downtown and in the surrounding inner city communities.

Other major system deficiencies are forecast in the north-south direction in west London, the east-west direction in north London and the north-south direction along the east side. The City has five (5) basic choices to address these problems:

1. Restrain further City growth to eliminate traffic growth. This is not considered a reasonable approach for an economically healthy city;
2. Direct all City growth only to higher density inner city community intensification, and in the downtown. This will have severe restrictions on further suburban expansion, with resulting redevelopment impacts on the older city communities, and possible suburban development pressure outside the City;
3. Divert traffic growth exclusively to public transit (see Section 5 below);
4. Increase existing transportation network capacity by widening most city arterials, but with associated land use, heritage and environmental impacts, and/or;
5. Offer a combination of increased transit services on roadways where capacity increases (i.e. widening) are constrained, and road widenings on unconstrained roads and those associated with city expansion and development.

This study has concluded that this fifth strategic choice is the most appropriate, reasonable and achievable for London.

6. THE ROLE OF PUBLIC TRANSIT

6.1 Transit Use Target – Public participation in this study included questions on the role that transit should play in meeting long term transportation needs in London, especially to reduce the amount of arterial roadway widenings and extensions required in the future. Achieving the City's targeted 15% reduction in single occupant vehicle use (SOV) will require increased ride sharing, walking and cycling, plus an increase in public transit use from about 8.5% of all trips now, to 12% in the future.

It will be a challenge to attain this level of transit market penetration in London, or in any other comparable Canadian city based on recent trends. It is, however, achievable if the transit service is provided the resources to adapt to changing market conditions and customer needs. Therefore, the future traffic forecasts generated for this study include the 15% reduction in SOV use, and resulting increase in transit use to 12% of trips. Actual SOV reduction is expected to be lower than this target beyond the inner city, and higher within the inner city. This is achievable over the long term because of the intensity and land use form expected to develop in the inner city, and if significant enhancements and incentives towards transit use are also provided. Therefore, measures to encourage alternative modes of transportation should focus primarily and firstly on the inner city.

To illustrate the challenge ahead for public transit, 12% of all trips using transit would result in about 95 annual transit trips per capita in London by 2011. This is much higher than the 39 transit trips per capita recorded in 1996, but is comparable to ridership in other larger cities - Ottawa (100), Calgary (79), Winnipeg (62) and Edmonton (61).

6.2 Factors Affecting Use of Transit - This study diverted from the original Terms of Reference to consider public questions about future transit options in London. Transit use data was collected from larger Canadian cities similar in size to the built-out London, namely Ottawa, Winnipeg, Edmonton and Calgary. This analysis concluded that in order to achieve the transit ridership found in these cities, with the types of enhanced transit services in use such as transit priority, HOV lanes, busways and Light Rail Transit, London would have to achieve the following transit-supportive changes:

- Implement existing Official Plan policies to increase the City's population density through the development / redevelopment of higher density nodes and communities;
- Increase the employment density in downtown London, also through more intensified redevelopment, to at least double the number of jobs per square kilometre;
- Significantly decrease the amount of long term parking in the downtown, and;
- Increase the quality and quantity of the City's transit service.

6.3 Types of Future Transit Services - If these transit-supportive factors can be achieved in London, a transit market population of 675,000 people will provide new

opportunities for enhanced transit systems, most notably dedicated High Occupancy Vehicle (HOV) lanes or bus lanes on major arterial roads. Light Rail Transit (LRT) may also be achievable, as in Edmonton and Calgary for example. However, more advanced forms of rapid transit, including subways, are expected to remain viable only for the larger, higher density metropolitan centres such as Toronto, Montreal and Vancouver, as shown in the following chart:

City	1996 % work trips by Transit	1996 Transit Trips / Capita	Types of Transit Services Provided
London	7.4	39.1	Bus service
Hamilton	8.8	48.4	Bus Service
Edmonton	11.1	61.0	Bus Service, Bus Priority, LRT
Winnipeg	15.5	62.0	Bus Service, Bus Priority
Calgary	13.3	78.8	Bus Service, Bus Priority, LRT
Ottawa	19.4	100.4	Bus Service, Bus Priority, Busways
Vancouver	15.3	79.2	Bus Service, Bus Priority, Rapid Transit
Montreal	21.9	187.0	Bus Service, Bus Priority, Rapid Transit
Toronto	23.6	156.1	Bus Service, Bus Priority, LRT, Rapid Transit

An important conclusion from these transit comparisons is that the future built-out London should support enhanced HOV lanes, busways and perhaps LRT, but these services can only be provided if sufficient rights-of-way for properly located transportation corridors are protected and integrated into the roadway network.

7. LONG TERM TRANSPORTATION CORRIDOR PROTECTION PLAN

Within each of the four City sectors analyzed in this study, various corridor protection options were evaluated against the following considerations:

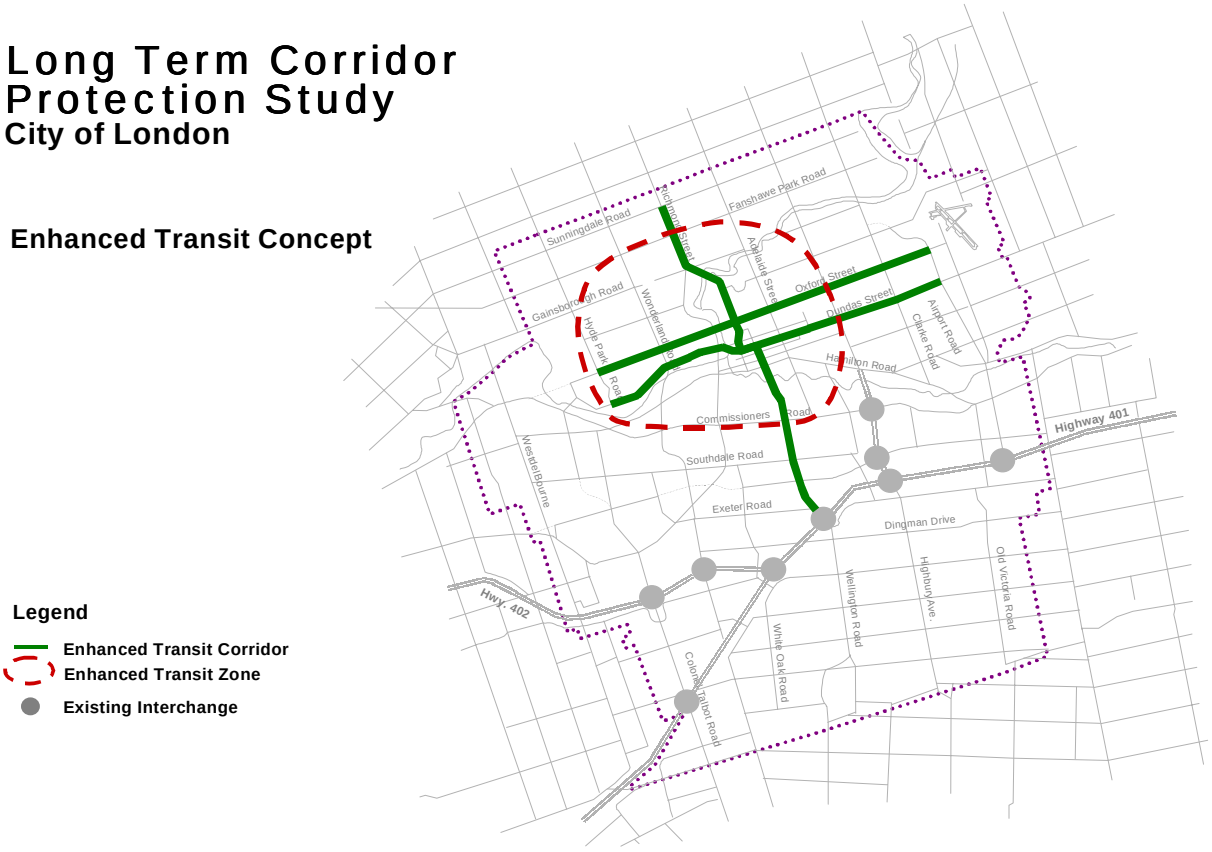
Social Impact On :	**Natural Impacts On:**	**Transportation Impacts On:**
- Land Use Proximity & Character	- Policy Conformance	**-** Improved System Continuity
- Heritage Resources	- Drainage	- Opportunities for Alternative Modes
- Traffic Noise	- Vegetation	- Network Level of Service
- Visual Aesthetics	- Fisheries and Wildlife	- Traffic Inducement
	- Emissions	
	- Energy Consumption	

From this evaluation of individual corridor alignment options, the Recommended Corridor Protection Plan was developed as shown on the final Executive Summary page. The Plan is summarized as follows by City section:

Central: This older City area contains the most physical constraints to roadway widening and extension, including existing building forms and density, heritage structures, sensitive residential communities and environmental features. Between Commissioners Road and Oxford Street, most arterials in the older City are restricted within their existing right-of-way, and this is where enhanced transit must be introduced to meet expected travel demands, as shown on the following concept .

Long Term Corridor Protection Study
City of London

Enhanced Transit Concept



Legend

- Enhanced Transit Corridor
- Enhanced Transit Zone
- Existing Interchange

South of the Thames River, opportunities exist to widen existing east-west routes (Commissioners, Southdale, Bradley, Exeter) and north-south routes (Wonderland, Wharncliffe, White Oak, Wellington, Pond Mills and Highbury) to either four or six lane configurations.

East Side: Significant north-south travel demands are forecast in this major employment growth sector from Highbury Avenue to the east City boundary. Available arterial alignments to meet future travel demands are limited to Highbury, Clarke and Airport Road. Therefore, this study recommends the City protect for a four lane expressway facility along Airport Road from Highway 401 to Sunningdale Road. This, along with other widening protection recommended in this area, provides maximum planning flexibility with vehicle lanes, HOV lanes or exclusive buslanes.

North Side: North London includes an existing arterial grid with several corridors that can be protected for widening, including Sunningdale Road, Fanshawe Park Road, Oxford Street and/or the Gainsborough/Windermere/Kilally route. By protecting some sections for four lanes, plus 6 lanes along parts of Fanshawe Park Road and Oxford Street, the study concludes there is no resulting need for an east-west expressway facility across the north end of London.

West Side: As with east London, north-south transportation capacity is limited in the west side to Westdel Bourne, Boler/Colonel Talbot and Wonderland Road. Study analysis shows that maximum widening of these routes is insufficient in meeting long-

term travel demands in west London. Therefore, the recommended approach for this section of the City is protection of a long term expressway facility, generally located between Westdel Bourne and Woodhull Road. East-west corridor protection is also recommended along Commissioners, Southdale, Bradley extension, Exeter and Dingman Drive. Note that the proposed widening of Highway 401 to eight lanes through London could reduce the need to widen crossing roadway corridors along Exeter Road and Dingman Drive.

8. RESPONSE TO OTHER ISSUES

What are the impacts of the Corridor Protection Plan on retail centres and the downtown? Recommended improvements to the Central Area transportation system, including provision of enhanced transit services in this area, are intended to support the continued business vitality of the downtown. Similarly, recommended corridor protection of peripheral arterials will serve existing and planned suburban retail centres. If this corridor protection, and/or enhanced transit service for the downtown are not protected, eventually resulting in travel congestion, then the downtown and retail centres would be expected to experience negative impacts from lack of convenient access.

Are the needs of the business community for goods movement met in the Recommended Plan? Yes, the Plan provides needed transportation corridor capacity for all modes of vehicular transportation, especially connecting to Highway 401 and 402.

What is the magnitude of induced traffic generated by the Recommended Plan? If induced traffic is measured by arterial roadway lane length per capita, which is currently 5.7 arterial lane km/1000 persons, then the Recommended Plan actually offers less at about 4 lane km/1000 persons, equating to less potential traffic inducement into the network. As long as transportation improvements are not implemented at a faster rate than required, there should be no overall significant increase in induced traffic.

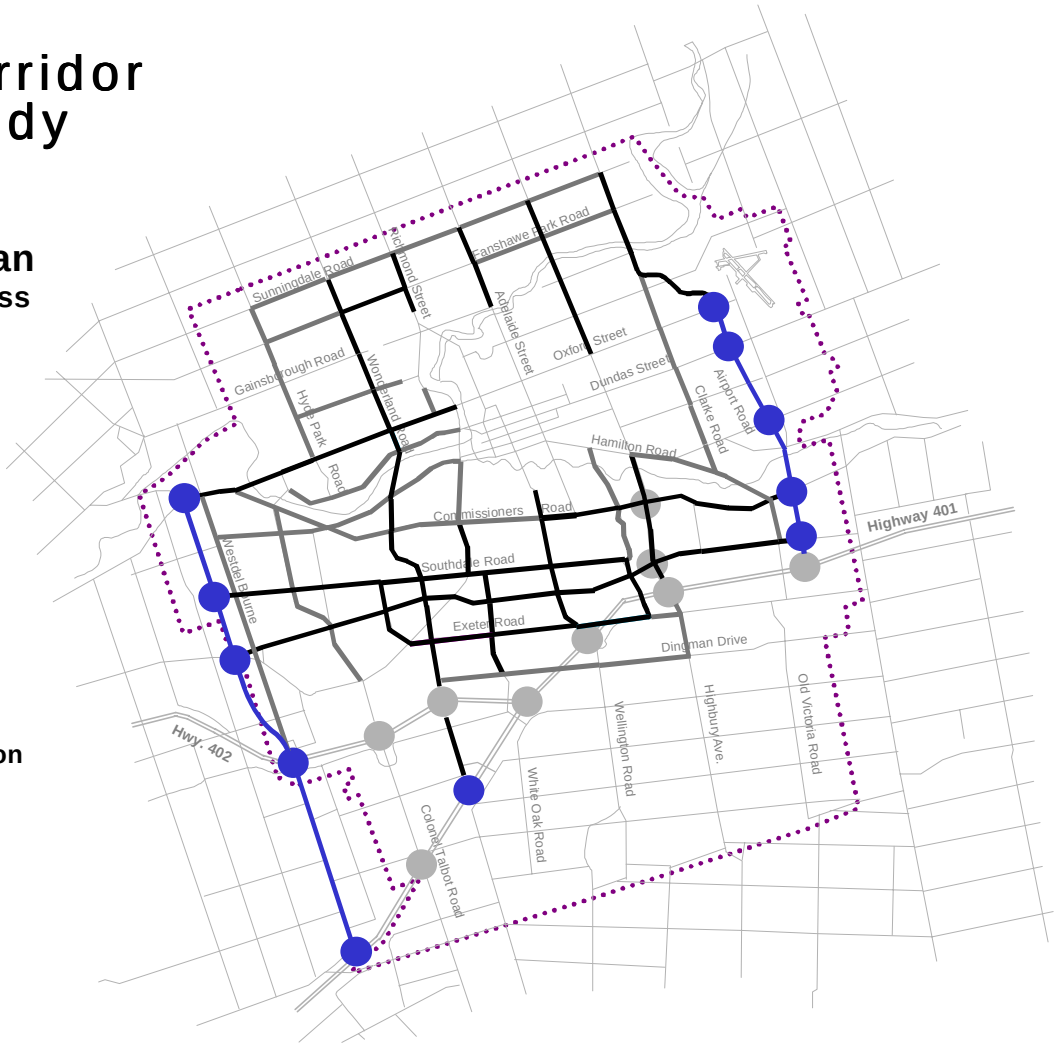
What are the expected behavioral shifts of households/residents and businesses resulting from the Recommended Plan?

The Plan is based, in part, on the City's targeted 15% reduction in SOV use, and the attainment of enhanced transit service in the "older city" without any corresponding increase in roadway capacity in this area. Therefore, the Plan is expected to result in travel shifts towards transit in the "inner city".

What happens to the protected corridors if London achieves significant reductions in forecasted traffic growth in the future? If unforeseen long term conditions eventually result in a lack of demand for the amount of additional arterial capacity being protected in the arterial corridors, with sections of protected corridors then proven to not be required, the City would have the option of reverting these protected lands to other purposes.

Long Term Corridor Protection Study
City of London

Corridor Protection Plan
Preferred Corridors to Address Full Build-Out Needs



Corridor Protection Configuration

- 4 Lanes
- 6 Lanes
- Expressway
- Existing Interchange
- Proposed Interchange

Corridor Protection	From	To
4-Lane Expressway:		
Between Westel Bourne & Woodhull	401	Oxford
Airport Rd.	401	Oxford
6-Lane Arterials:		
Fanshawe Park Rd.	Wonderland	Richmond
Richmond St.	Sunningdale	Western Rd.
Adelaide St.	Sunningdale	Windermere
Highbury Ave.	Sunningdale	Oxford
Wonderland Rd.	Sunningdale	401
Oxford St.	West Exway	Wharncliffe
Commissioners Rd.	Wellington	East Exway
Southdale Rd.	West Exway	Pond Mills
Wellington St.	Baseline	401
Wharncliffe Rd.	Commissioners	Southdale
White Oaks Rd.	Southdale	Dingman
Clarke Rd.	Oxford	Sunningdale
Bradley Ave.	West Exway	East Exway

Corridor Protection	From	To
Pond Mills Rd.	Southdale	Exeter
Exeter Rd.	Southdale	Pond Mills
4-Lane Arterials:		
Sunningdale Rd.	Hyde Park	Clarke
Fanshawe Park Rd.	Hyde Park	Wonderland
	Adelaide	Clarke
Platts Lane	Western	Oxford
Byron Baseline Rd/ Springbank Dr.	Westel Bourne	Wharncliffe
Sarnia Rd.	Hyde Park	Western
Riverside Dr.	Boler	Woodward
Commissioners Rd.	Oxford	Wellington
Pond Mills Rd.	Southdale	Hamilton
Dingman Dr.	Wonderland	Highbury
Highbury Ave.	401	Dingman
Boler/Colonel Talbot	Commissioners	Wharncliffe
Westel Bourne	Oxford	402
Clarke Rd.	Oxford	Hamilton
Hamilton/Old Victoria	Highbury	Bradley