

Final Report

Brookline Taxi Study

Prepared for
Town of Brookline, Mass.

June 12, 2007

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Executive Summary

This study was undertaken to advise the Town of Brookline on alternative taxi licensing systems the Town might consider and the ease or difficulty of transitioning to an alternative system. Alternative taxi systems include medallion systems, franchise systems and retaining the current system with modifications that could include substantially higher fees.

The study process included visits to each of the four main taxi companies; consultations with taxicab company owners and drivers, cab users and Town staff; analysis of data including taximeter and odometer readings that were collected by Town staff; and presentations of two sets of options to the Transportation Board.

This report includes an overview of the Brookline taxi industry, a summary of issues and options discussed in the course of consultations, results of data analysis, input received from stakeholders, conclusions and recommendations.

Key findings of the report are:

- The Town's 187 licensed cabs operate primarily from four main cab companies, which range in size from 20 to 77 taxicabs each. Affiliated owners operate a total of 22 cabs.
- Brookline cabs provide an average of 3,300 trips daily. About 80% of the trips are arranged through telephone orders; the other 20% of trips commence at taxi stands, primarily near "T" stations and in the Coolidge Corner area.
- Brookline currently has about the right number of cabs to serve current trip volumes. The evidence that Brookline does not have too many cabs lies in data showing that drivers average a healthy number of trips per shift and driver earnings are equal to or greater than typical taxi driver earnings. At the same time, Brookline does not have too few cabs as there do not appear to be any systematic shortages of cabs or extensive waiting times for pickups.

Key conclusions:

- The Town can tap the economic value created by the Town's limitation on the number of cabs by selling medallion licenses to companies and drivers and through higher fees on Hackney Licenses held by cab companies.
- The economic value that can be derived through medallion sales and fees would be enhanced by reducing the number of cab companies from four to three, while maintaining the current total number of licensed cabs. Reducing the number of companies would enable the Town to increase minimum fleet size to 40 cabs per company and create better scale economies within the industry.
- Changes to the regulatory system should be carefully designed to ensure the continuation of satisfactory service response times. The key consideration is to

foster strong cab companies that provide good dispatch service given that telephone orders comprise 80% of trips. Toward this end, the large majority (70% to 80%) of taxicab licenses should be controlled by cab companies. The Town should avoid creating a system that would lead to fragmentation of ownership and accountability, both for service quality reasons and to avoid administrative complexity.

- While most taxicab licenses should be controlled by cab companies, there is benefit to both drivers and the industry as a whole for some taxicab licenses to be issued to drivers in the form of medallion licenses to provide drivers with the opportunity to gain equity in the taxi business to which they make a vital contribution.
- Cab companies and the industry as a whole would benefit from as-of-right renewals for Taxicab Business Licenses. As-of-right renewals would provide the stability and predictability to taxi companies that is needed for them to invest in newer cars, modern dispatch technologies, advertising and marketing.
- Moving to a system with as-of-right renewals of Taxicab Business Licenses should include a transition period in which companies may ramp-up in size and are required to develop into financially viable companies with the capability of meeting customers' dispatch service needs.

Recommendations are designed to develop strong multiple dispatch companies, generate revenue to the Town based on the value created by the Town's limit on the number of taxicabs, provide opportunity for drivers to gain equity in the industry and transition to a new regulatory system that can be successfully administered within the Town's resources.

Recommendations address transitioning to a system that includes Medallion as well as Hackney Licenses, and converting Taxicab Business Licenses to become renewable as-of-right after a process involving company applications and benchmarking.

A) Transition to system with Medallion and Hackney Licenses:

1. Continue with the current total of 187 authorized taxicabs.
2. Transition to a system in which 131 Hackney Licenses continue to be held and operated by cab companies, 45 Hackney Licenses are converted to Medallion Licenses issued to Brookline taxi drivers and 11 Hackney Licenses are converted to Medallion Licenses issued to companies.
3. Issue the 45 driver-held Medallion Licenses to highly qualified drivers over a 3-year period (15 each year) based on drivers' years of experience and having a good record.
4. Driver-held Medallion Licenses must be driven by the medallion holder at least 180 shifts per year. The cab could be leased to other driver(s) when the medallion owner is not driving.

5. Convert 11 company-held Hackney Licenses to Medallion Licenses after each company successfully completes transition period in which it fulfills management plans that have been approved by the Town, as described below.
6. Driver-held Medallion Licenses should be transferable for consideration after three years. Company-held Medallion Licenses should be transferable to other companies and to drivers after the license is converted from a Hackney License. The Town could levy a transfer fee in addition to Medallion License fees.
7. Charge fees for Medallion Licenses of either (a) \$600 per month for seven years; or (b) \$350 per month for seven years and \$200 per month thereafter. Medallion fees would be in addition to licensing fees that cover regulatory costs based on staff time and other resources expended to administer and enforce the regulatory system.

B) Transition to system in which Taxicab Business Licenses are renewable as-of-right:

1. After a transition period, Taxicab Business Licenses should be renewable as-of-right provided that the cab company complies with applicable regulations.
2. Taxicab Business Licenses should be issued based on Town review and evaluation of applications from cab companies. Applications should include experience and qualifications; details of the proposed operation including vehicle make and age, clean fuels and accessibility; company financial resources and operating benchmarks for number of taxicabs in operation and number of dispatch trips provided. Company applications should also include up to three proposed fee schedules for fees to be paid to the Town for Hackney Licenses.
3. The Town should select companies based on the best interests of the Town taking into account the score from the non-fee evaluation and the present value of proposed fees.
4. Current Taxicab Business Licenses and Hackney Licenses should be phased out as new licenses are phased in.
5. The number of cab companies should be reduced from four to three.
6. There should be a minimum of 40 cabs per company including affiliates .
7. There should be a maximum number of cabs per company of 50% of the total number of company-held Hackney and Medallion Licenses.
8. An annual taxicab review process should be established in which the Transportation Board reviews company compliance with regulations, determines when companies meet business plan benchmarks for number of taxicabs in operation and number of dispatch trips provided, and considers if there is a need to increase or decrease the number of Hackney Licenses issued to each company.

9. The new Taxicab Business Licenses should become renewable as-of-right, and 8% of each company's Hackney Licenses should be converted to transferable Medallion Licenses, once the Board determines that a company has met its benchmarks for number of taxicabs in operation and number of dispatch trips provided.
10. If the Transportation Board determines that a company has not implemented its business plan as proposed, the Board should invite applications from prospective taxicab companies for the company's Taxicab Business License, following the same procedures as in the initial application process.

Implementation of these recommendations would strengthen the financial position and service capacity of the industry, generate an estimated \$0.5 million to \$1 million in revenue to the Town annually after full implementation, provide opportunity for drivers to gain equity in the industry and create a sustainable regulatory system.

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Purpose and Methodology

This study was commissioned by the Town of Brookline, Mass. to provide the Town with expert advice on the types of alternative taxi licensing systems the Town might consider and the ease or difficulty of transitioning to an alternative system. Alternative taxi systems include a medallion system in which taxicab licenses are auctioned or issued by lottery with substantially higher fees. Issuance of medallions has the potential to accrue significant revenues for the Town. Other alternatives include a franchise system and retaining the current system with modifications that could include substantially higher fees.

Issues considered in the course of the study include:

- Potential revenue that might be raised for the Town.
- Impacts of regulatory changes on taxi users, companies and drivers.
- Ease of implementation and administration.
- Opportunities for drivers to gain equity in the taxi industry through ownership of medallion licenses.

The project was conducted by Bruce Schaller, Principal of Schaller Consulting. Mr. Schaller is an internationally recognized expert in the taxicab business with experience in the U.S., Canada and Russia. He has 25 years of experience in the areas of taxicab regulation, operations and economics, market research, and demand estimation and forecasting.

Established in 1998, Schaller Consulting's taxicab clients have included small and mid-size jurisdictions such as Alexandria, Va., Anaheim, Calif., Laredo, Tex., and Montgomery County, Md., as well as large cities such as New York, San Francisco and San Diego. The firm's experience includes medallion systems, franchise systems and licensing systems similar to Brookline's as well as open entry regulatory systems. Schaller Consulting has developed and assisted in the implementation of extensive changes to taxi regulatory systems that include selection of taxicab companies in a competitive process, issuance of taxicab licenses (medallions) to drivers and implementation of annual review processes of new taxi regulatory systems.

The study began in December 2006. The study included consultation with stakeholders and data collection and analysis:

- Initial site visit in December 2006 that included meetings with taxi users, taxi company owners, taxi drivers, Town staff including personnel from the legal office and Police Department, visits to each of the cab company facilities and a brief presentation to the Transportation Board.

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- Analysis of taximeter and odometer readings that were collected by Town staff in February 2007.
 - Telephone interviews with regulatory and industry representatives in Boston to gather information on Boston’s medallion system.
 - Preparation of regulatory options and a revised set of options for review and discussion with stakeholders.
 - Meetings and presentations to review and obtain feedback on each set of regulatory options from taxi owners and drivers and the Transportation Board. These sessions were held in March and April 2007.
 - Further review and analysis of information collection.
 - Preparation of this final report, which will be followed by a presentation of recommendations to the Transportation Board.

This report presents findings from this research, analysis of regulatory options and recommendations.

Overview of the Brookline Taxi Industry

Brookline currently has 187 authorized taxicabs and 380 licensed taxi drivers. The four main companies range in size from 20 cabs to 77 cabs and hold a total of 162 Hackney Licenses. (There is also a fifth company with three cabs.) In addition, 22 Hackney Licenses are held by 10 affiliated taxi owners, nearly all of whom are affiliated with Bay State Taxi or Brookline Red Cab.

Table 1. Number of Hackney Licenses Held by Cab Companies and Affiliated Drivers

Cab company	Hackney Licenses held by company	Affiliated taxicabs	Total
Bay State Taxi	77	12	89
Brookline Red Cab	40	10	50
Town Taxi	20	0	20
Eagle Cab	25	0	25
Hazira Cab	3	0	3
Total	165	22	187

The four taxi companies have quite different histories. Red Cab is the oldest company and was for many years the largest cab company in the town. Red Cab encountered financial difficulties in the early 1990s and was sold to the owner of Bay State. The two companies had common ownership from the time of that purchase until recently. A sale of Red Cab to separate ownership was approved by the Transportation Board this spring and was completed in May 2007.

The other two main cab companies, Town Taxi and Eagle Cab, were issued Taxicab Business Licenses in the past several years. Town Taxi also operates a radio service in Boston; Eagle Cab was a new company upon its entry into Brookline.

Industry operations

Brookline cabs provide an estimated 23,000 trips per week, or 3,300 per day on average. About 80% of all cab trips are arranged through telephone orders from customers who call a company's central dispatch office. The other 20% of trips commence at taxi stands, primarily near "T" stations and in the Coolidge Corner area.

The large majority of Bay State and Red Cab trips originate by telephone dispatch. Each company dispatches 1,000 to 1,500 trips per day. Bay State and Red Cab drivers generally operate out of taxi stands and will take a stand customer when they reach the head of the line, but will also leave the line to pick up a dispatched call.

By contrast, approximately two-thirds of Town Taxi and Eagle Cab trips originate at cab stands. Telephone orders account for one-third of trips. Town Taxi and Eagle each dispatch approximately 100-130 trips per day.

Although exact figures are not available, it is clear that many of dispatch trips served by Brookline cabs originate outside of Brookline, mainly in Boston and in particular in the Longwood medical complex area. Trips originating outside of Boston often involve bringing Brookline residents home. One company, Bay State, serves substantial account business in Boston for businesses and other customers. The other three companies have minimal account business.

Information provided by the four companies indicate that two-thirds of the cabs operate “solo,” meaning that one driver leases the cab and drives one shift per day. The other one-third of cabs operate either “semi-solo” (two steady drivers on the cab) or are leased by the shift, generally two shifts per day.

Except for a few affiliate owners who also drive, taxi drivers in Brookline lease their cabs from either a cab company or from an affiliate owner. Drivers typically pay \$500 to \$700 per week for solo leases and \$340 to \$420 per week for semi-solo leases. Lease fees vary by age of the car and cab company. Lease fees are higher for newer cars and at companies that provide a larger number of dispatch trips.

Drivers typically serve 14 to 17 trips per day and gross \$190 to \$250 per shift, not including tips. Taking into account tips and driver lease fees and gasoline costs, driver incomes are estimated to average \$130 for double-shifted drivers and \$140 for solo drivers.¹ These driver income levels are comparable to or higher than driver incomes in other jurisdictions.²

Town Taxi uses computer-aided dispatch in which call-takers enter customers’ information into a desktop computer. The computer then displays trips on the dispatcher’s screen for voice dispatch using two-way radios. The other three companies use manual dispatch systems. Bay State and Red Cab call-takers write down callers’ information on square slips of paper; the call-taker then gives the slips to the dispatcher for voice dispatch.

The Brookline Police Department, which is responsible for driver licensing, issues approximately 78 new licenses to taxi drivers annually (not including drivers who return after letting their licenses expire). Based on a total of 380 drivers, driver turnover is 22%. Despite this fairly high turnover rate, there are clearly a sizeable number of drivers with 5, 10 or 15 or more years of experience, however. It appears that many new drivers stay a short time while a core of experienced drivers remain active drivers for many years.

¹ It should be noted that there is great variation in driver incomes. The lower end of the range for the week that we have data was 30% to 40% below these figures and the upper end of the range was nearly double the average.

² By comparison, driver incomes average about \$125 in Boston, \$158 in New York City and \$114 in Alexandria, Virg.

The vehicles used as taxicabs are generally 3 to 6 years old. Vehicles are generally bought used for \$4,000 to \$8,000. The exception is that Eagle Cab has purchased several new Scions at a cost of about \$16,000 each.

Evaluating the number of taxicabs in the Town

A key concern in any consideration of regulatory changes to the taxi industry is to assess the number of taxi vehicle (Hackney) licenses currently issued. Does Brookline currently have too many cabs, not enough or about the right number? Should regulatory changes seek to maintain or change the current overall number of cabs?

To evaluate this issue, the project included data collection on current trip volumes, fare revenues and driver earnings. Town staff collected taximeter and odometer readings from nearly all Brookline taxicabs in February 2007. The methodology and results of this data collection effort are detailed in the appendix. These results were supplemented with information related to availability of taxicabs in the Town and results from a statistical model that I have developed of the number of taxicabs in 118 U.S. cities.

Analysis of this information concluded that Brookline currently has about the right number of cabs. This conclusion is based on finding that:

- 1) Drivers average 14 to 17 trips per shift, fairly high trip volumes in a dispatch-oriented environment such as Brookline.
- 2) Driver incomes are equal to or greater than typical taxi driver earnings. This result also indicates that Brookline does not have too many cabs.

Trip volumes and driver earnings findings indicate that Brookline does not have too many cabs.

- 1) There do not appear to be any systematic shortages of cabs in Brookline that would indicate a need for additional cabs. Companies generally report having a sufficient number of cabs available to meet dispatch needs, the group of senior citizens we met with reported satisfactory response times, and taxi stands appear to have sufficient supply of cabs.
- 2) Results from my statistical model indicate that jurisdictions similar to Brookline on key indicators of taxi demand – the number of households without a car and with level of rail transit use – on average have as many or more cabs than are licensed in Brookline. Model results are thus indicative that Brookline does not have too many cabs.

Overall, results of the analysis indicate that the number of cabs in Brookline should be neither increased nor decreased.

Issues and Alternatives Analysis

A number of issues were raised and discussed during site visits in December 2006 and March and April 2007. This section provides background information; identifies and discusses key issues; summarizes alternatives considered and stakeholder feedback; and presents conclusions. This analysis provides the basis for recommendations, which are presented in the next section.

Stakeholder interests and identification of key issues

Core interests expressed by stakeholder groups during my visit were:

1. **Town:** The genesis of this project was the Town's interest in tapping the economic value created by the Town's limitation on the number of taxicabs. One key issue is how the Town might capture the economic value created by entry controls and the implications of doing so for the industry and customers.
2. **Companies:** Cab company owners expressed a strong desire to have certainty about the continuation of their Taxicab Business Licenses, the renewal of which is currently subject to Transportation Board action. A key issue is thus how the Town might provide that certainty without undermining (indeed, with augmenting) its ability to achieve regulatory goals. A related issue is how the Town determines the number of Hackney Licenses issued to each cab company.
3. **Drivers:** Drivers expressed a strong desire to gain equity in the taxi business so that they could realize a portion of the profits generated by their labors. This desire led them to embrace a medallion system, with safeguards to assure their opportunity to buy medallion licenses.
4. **Town and taxi users:** Although a formal evaluation of service quality is not part of my scope of work, a small group of senior citizens that I met with expressed some concerns about service quality, mentioning their desire for a higher level of driver politeness and assistance with packages or crutches or as needed in other ways. The Town has sought in recent years to create a multi-company industry with a strong competitive dynamic, an important issue in evaluating changes to the regulatory system. Finally, both the Town and taxi users have a strong interest in ensuring that companies and drivers are accountable for the service they provide.
5. **Potential entrants.** An additional issue is how the Town evaluates new applicants for Taxicab Business Licenses, and related to that, how many companies are ultimately authorized.

For purposes of discussion, I have organized these issues into five areas:

1. Capturing the economic value created by entry controls.

2. Providing greater certainty to cab companies to aid their planning and investment, while also addressing service quality and accountability goals.
3. Determining the number of taxicabs to be authorized.
4. Drivers' opportunities for gaining equity in the business.
5. Evaluating applications from new companies.

1. Capturing the economic value created by entry controls.

Like most jurisdictions in urban areas in the United States, Brookline regulates the number of taxicabs to prevent an oversupply of cab service and to foster stability and accountability in the industry. A largely unintentional consequence is that entry controls often create taxicab license values. In dense cities with a high demand for taxi service, taxicab licenses reach values as high as \$350,000 in Boston and \$500,000 in New York. More typically, license values are less than \$100,000. Examples are values of approximately \$30,000 in Atlanta and San Diego, \$50,000 in Chicago (until a recent auction which attracted higher prices) and \$55,000 in Montgomery County, Md., in suburban Washington DC.

In cities such as Boston and New York, the value of medallion licenses is based entirely on the value of the right to pick up street hails and at taxi stands. Without entry controls there would be no value to the license since anyone wanting a license could obtain one with payment of administrative fees to the city.

In Brookline, however, the value to Taxicab Business Licenses is derived by a combination of factors:

- Entry controls, as discussed above.
- Flow of business from telephone orders, including contract work. In contrast to large cities, most taxi trips in Brookline originate through telephone orders (including substantial amounts of contract work for Bay State). Taxicab Business License values are likely to be greater for cab companies with substantial dispatch volumes than for a start-up company that is just establishing a dispatch business.
- Physical assets, e.g., dispatch hardware and software and office and garage facilities and related equipment.
- Intangible assets, e.g., management know-how and brand awareness and reputation.

The relative importance of each of these factors affects the revenue that the Town could obtain through medallion auctions, franchise-type fees or other mechanisms. Revenue potential is higher to the extent that drivers' ability to make money is based on working cab stands and lower to the extent that revenue flows are dependent on dispatch work.

The value derived from entry controls is also affected by cab company size. Within a size band, costs are essentially fixed for staffing for call-takers, dispatchers and supervisors, office rent and advertising. These costs do not vary significantly whether a company is operating 20 cabs or 40 cabs and whether it dispatches 100 trips per day or 300 trips per day. (Costs do increase at certain points, e.g., when call volumes require a second call-taker.) Because these fixed costs comprise a substantial fraction of total costs, company revenues and profitability are substantially higher in a 50-cab operation than a 30-cab operation. Companies with less than 20 or 25 cabs may not be profitable at all. The Town's decisions about how many cabs to authorize for each company thereby affects potential Town revenues from medallion or other fees.

In discussing potential fee revenue it would be useful to have a solid estimate of cab company profitability and to calculate from that potential Town revenues from medallion or other fees. It is difficult at this time to make such an estimate, however, for two reasons:

- Companies are not required to disclose financial information to the Town. One company (Eagle) provided rudimentary financial information but the other three companies have not done so.
- Two companies are currently in situations with considerable uncertainty: Red Cab due to transfer of ownership, and Eagle Taxi due to a recent accident involving one of its vehicles at Logan Airport. Thus, historical financial information even if available may not be a reliable indicator of future profitability.

Although not known specifically for Brookline companies, likely or potential company profits can be estimated based on experience in other cities and data that is available for Brookline trip volumes, lease fees and insurance costs. Estimated profitability for companies with 40 to 50 cabs is estimated to range from \$120 to \$150 per week per cab. A company with 40 to 50 cabs would show profits of approximately \$250,000 to \$350,000 annually. See Table 2 for estimated revenue and expenses in the middle of this range.

Table 2. Estimated revenue and expenses for 45-cab fleet

	Annual expenses
Lease fees	\$1,330,875
Dispatch operation (calltakers, dispatcher, suprv)	\$432,900
Vehicle depreciation and interest	\$120,704
Veh maintenance, repair, garage rent, other expenses	\$217,350
Insurance	\$238,500
Licenses and fees	\$17,820
Total expenses	\$1,027,274
Net revenue	\$303,601
Net revenue per cab per week	\$130

Alternatives considered

Alternatives discussed with stakeholder groups in March and April included the following options for issuance of medallions:

- Auctions of medallion licenses to companies and drivers with no restrictions on transfer.
- Sale of medallion licenses to drivers at set prices, with selection of driver applicants based on qualifications (e.g., years of drivers' experience).
- Sale of medallions to companies with the restriction that the medallion licenses could only be sold to another Brookline company.
- Transfer fees collected at the time of transfer of medallion licenses.

Options considered also covered alternatives for drivers and companies to pay a sales price:

- Replacing an upfront sales price with monthly or weekly payments, made either over a period of 7 years or lower payments made in perpetuity.
- Increased annual fees collected as part of the current system or a new system, e.g., franchising system.

Stakeholder views

Company owners expressed strong views on the economic issues under discussion:

- The Town should recognize the investment the companies have made in their businesses and the service they have provided the Town.
- Companies strongly desire to have transferable medallions. They want to use medallions as collateral for borrowing. They also want to be able to sell medallion license(s) when they need to raise cash, as for example, to pay off a judgment from an accident involving one of their cabs. Companies feel that limitations on who they can sell medallions to overly limits the liquidity of the medallion values and significantly reduces the value of their medallions.
- Companies support the proposal that Bay State/Red Cab has put forth in which companies would give up one-third of their Hackney Licenses to be auctioned to drivers as medallions and retain two-thirds as transferable medallions owned by the company.

Drivers strongly expressed that:

- The Town should recognize the “sweat equity” of drivers who to date have not benefitted from an ownership position in the industry.

- Drivers should be given the opportunity to profit from rising medallion values, as seen in Boston and other cities.
- Drivers feel that it would be fair for the Town to charge them for the value of the medallions, provided they then have a transferable asset.
- A group of drivers that I met with in April preferred higher payments for 7 years than lower payments in perpetuity.
- This group of drivers accepted the idea of a driving requirement but objected to restrictions on leasing for a second shift.

Affiliates would like to continue in their current status in which they affiliate with a company and lease their cab(s) to drivers or, in a few cases, drive the cab themselves with lease drivers working some shifts.

Conclusions and implications regarding economic value

The following conclusions can be drawn from this analysis:

1. The Town would enhance the economic value that can be derived from the taxi industry if there were fewer companies of overall larger size (e.g., all companies with at least 40 or 50 cabs). Reducing the number of companies (most likely, from four to three) would create better scale economies in the industry. To increase the floor on company size, it is strongly preferable to reduce the number of companies than to authorize a larger number of cabs. The latter approach would weaken the industry by diluting trip volumes on a per cab basis. The recommendations include a method of moving toward a smaller number of companies with a higher minimum fleet size than the 10 cab minimum that is currently required.
2. The Town can gain economic value from companies for the right to operate in the Town and to own medallions or a similar asset. It is difficult to assign a value, however, given the status of two companies, the lack of detailed financial information and potential changes to company size. The recommendations address methods to set the values for companies taking into account these factors.
3. The Town can gain substantial economic value from the sale of medallion licenses to drivers. Recommendations include a fair and workable approach to issuing medallion licenses to drivers.
4. The form of taxi licenses issued to both drivers and companies needs to take into account potential impacts on service quality, accountability and administrative burden. Regulatory changes should be structured with the mutually supporting goals of strengthening the industry's service and accountability and strengthening industry finances, as discussed in the next section.

2. Providing greater certainty to cab companies to aid their planning and investment, while also addressing service quality and accountability goals.

The Transportation Board currently has the power to renew or not renew Taxicab Business Licenses. Although the Town has not denied renewal to any full-fledged companies, that possibility, combined with uncertainty about the number of Hackney Licenses to be issued to each company, introduces an uncertainty that the companies say makes them hesitate to invest in the business. This issue may be most acute for the smaller companies that have the greatest need to advertise and promote their dispatch services, but the larger companies have in practice made minimal investments in dispatch technologies or recent model vehicles.

It is common for taxicab operating authority to be granted either for an extended period of time (e.g., 5-10 years) or to provide as-of-right renewals in perpetuity provided that the licensee complies with all regulatory requirements. Under this approach licensees have certain due process rights that must be met before a license is revoked or renewal is denied. This approach provides licensees with a reasonable level of assurance that they can plan for the future and make investments to build their businesses.

In contemplating a system with as-of-right renewals, it is important for the Town to ensure that the new system meets the Town's needs for good quality taxi service, good accountability by the industry, and a system that can be readily administered. Several considerations are important in this regard.

First is the issue of competition between companies. The Town has taken significant steps to foster a competitive dynamic in the industry by granting Taxicab Business Licenses to two new companies and by working toward the sale of Red Cab to separate ownership. A competitive dynamic can be slow to develop, however, due to the name recognition of established companies and some customers' natural reluctance to try an "unknown." New companies need to make significant investments in marketing and advertising to compete with established companies, particularly if the established companies are providing satisfactory service to their customers. It is not surprising in light of these factors that the established companies (Bay State and Red Cab) currently serve 90% of dispatch trips serviced by Brookline cabs.

A second important consideration is the level of company control over its taxicabs. This is particularly important in a dispatch-oriented community such as Brookline, where telephone orders comprise 80% of trips. The provision of good dispatch service requires strong companies, which in turn requires that companies be accountable for the service they provide and have control over that service. Companies need to be able to recruit and bring on drivers who are committed to serving dispatch calls and to hold drivers accountable for actually picking up calls that they accept.

When drivers are affiliated with a company, the company's ability to manage the operation of the cab is limited by the driver's ability to move – with the medallion license – to another company. The pattern across the United States is that cab companies which operate in cities with fragmented ownership or control of vehicle licenses have difficulty providing good dispatch service. In this situation, the balance between

company control and driver independence swings too far toward the latter, leading to difficulties in meeting dispatch service needs.

Alternatives considered

Alternatives discussed with stakeholder groups in March and April included the following options relevant to this issue:

- Grant current companies as-of-right renewals contingent on companies complying with clearly defined requirements.
- Award franchises through a request for proposal (RFP) process with issuance based on the quality of service and level of accountability that companies propose to provide. Franchises would be awarded for a set term. At expiration, franchises would be re-issued through a new RFP process.
- Issue Taxicab Business Licenses based on criteria similar to the provisions in current code and with additional provisions relating to minimum fleet size and dispatch call volumes. Once issued, the new licenses would be renewable as-of-right provided that the company meets regulatory requirements.
- Set standards for dispatch service volumes and a minimum number of cabs for each company. The number of cabs in each company would be adjusted periodically based on dispatch volumes in order to maintain a healthy relationship between supply and demand and provide an incentive for companies to market their service. Companies falling below minimum requirements would not be renewed.

Stakeholder views

Company owners:

- Companies believe that they should not have to compete other others to retain their Taxicab Business Licenses. Existing license holders should be assured continuation of their licenses.
- Some company owners expressed skepticism that the Town would grant companies a greater level of autonomy and move away from what some see as a high level of discretionary control over the industry.
- Company owners express the view that they could maintain effective dispatch operations under a medallion system with fragmented ownership of medallion licenses.

Affiliate owners believe that the current system works well. Drivers did not have particular comments on these issues.

Conclusions and implications regarding company renewals, service quality and accountability

1. With dispatch trips comprising 80% of all taxi trips, the large majority (70% to 80%) of taxicab licenses should be controlled by cab companies that provide dispatch service. The Town should avoid creating a system that would lead to fragmentation of ownership and accountability, both for service quality reasons and to avoid administrative complexity.
2. The Town should move toward as-of-right renewals in order to provide stability and predictability to taxi companies, as part of an overall set of regulatory changes that also address service quality, accountability and financial issues.
3. In making these changes, the Town should recognize the current companies' experience and service to the community. Recommendations address how the Town should balance this consideration with service quality, accountability and financial considerations.

3. Determining the number of taxicabs to be authorized.

Under the current system, the Transportation Board sets the number of Hackney Licenses to be issued to each company in the process of granting Taxicab Business Licenses. Although in granting Taxicab Business Licenses the Board considers the effect of each license on the overall number of taxicabs, among other factors, the Board does not explicitly set an overall number of taxicabs for the Town. As a result of granting new Taxicab Business Licenses, the number of Hackney Licenses has increased from about 140-150 in operation in 2000 to 186 in operation currently.

As discussed earlier, my analysis concluded that Brookline currently has about the right number of cabs to serve current trip volumes. Although there appears to be a good balance between the supply of service and trip volumes, maintaining that balance is an important consideration in any changes to the regulatory system. Factors that affect demand include population changes, changes in commuting volumes due to economic growth or recession, and aging of the population. Another factor is the volume of account work served by the companies, including Boston accounts.

Alternatives considered

Alternatives discussed with stakeholder groups included the following:

- Continuing with the current system in which companies apply to change the number of taxicabs authorized under the Taxicab Business Licenses.
- Maintaining a fixed number of medallion licenses, subject to future Town issuances of additional medallions.
- Adjusting the number of cabs periodically using a guideline of trip volumes and taxicab licenses.

Stakeholder views

Companies prefer stability in the number of taxi licenses issued. They expressed little preference for the opportunity to increase the number of cabs based on increases in trip volumes. Company owners believe the Brookline taxi market is stable and additional trip volumes would be only from Boston account work.

Drivers and affiliate owners do not want to see “too many” medallion licenses issued.

Conclusions and implications regarding setting the number of cabs

1. The Town should maintain the current number of cabs for the immediate term. There is no need to change from current service levels. A significant change in the number of cabs would likely be detrimental to service quality and/or industry financial health.
2. In the longer term, the Town should have a mechanism to increase or decrease the number of cabs in response to changes in trip volumes. These adjustments should reflect changes in trip volumes at each company so that each company maintains a healthy relationship between supply and demand. Depending on the company, the opportunity for these adjustments may provide an incentive to market the company and increase trip volumes.

4. Drivers’ opportunities for gaining equity in the business.

Currently, aside from the 10 affiliated owners cab drivers in Brookline do not have the opportunity to gain equity in the taxi business. Drivers lease a cab from a company or an affiliated owner and do not benefit financially beyond the daily income they earn from driving the cab.

Drivers have expressed a very strong interest in a medallion system because it could provide them with the opportunity to gain an equity interest in medallion licenses. Drivers who own medallions in other cities benefit from the equity they may build from price appreciation as well as when they pay down the loans taken out for the original purchase.

As discussed earlier, it is desirable for cab companies to retain control over most of the licenses in order to promote the quality of dispatch service. In my experience, companies can operate effectively with up to 20% to 30% of their cabs being affiliated with them.

In considering converting some Hackney Licenses to driver-owned medallions, the Town will have to decide how to issue the medallions, who should be eligible, and what types of restrictions if any should accompany the licenses.

Medallion systems in Boston and other major cities have traditionally carried few restrictions on many if not most of the licenses.³ Medallion prices have been bid to record levels by brokers and lease managers who lease the medallions to drivers. As a result, relatively few drivers in medallion systems have the opportunity for medallion ownership. Only about 15% of active drivers in New York own a medallion; the figure in Boston is about one-half that percentage.

If medallion licenses were auctioned in Brookline, drivers might be outbid by other bidders. In addition, some drivers would not be able to fund the required down payment of 20% or more of the purchase price, and may lack the level of creditworthiness required by lenders. If the intent is for drivers to benefit from issuance of individual medallions, safeguards are needed to ensure that drivers have equitable access to medallion ownership. Toward this end, the Town could limit buyers to current Brookline drivers, and could allow drivers to pay monthly or quarterly fees to the Town instead of having to pay the entire purchase price upfront after an auction or sale.

A related consideration is driving requirements. If new medallions are limited to current Brookline drivers, it would make little sense for the new medallion holders to be able to quit driving and lease their medallions to other drivers. In this scenario, some drivers would benefit by becoming medallion owners while active drivers would continue to lease, albeit not from cab companies. Thus, consideration should be given to driving requirements for new medallion holders.

Alternatives considered

Alternatives discussed with stakeholder groups in March and April included the following:

- Issue 20% to 30% of the 187 currently authorized Hackney Licenses to drivers in the form of medallion licenses. The licenses would be issued to Brookline drivers, would be transferable and would carry a driving requirement.
- Issue 20% to 30% of the 187 currently authorized Hackney Licenses in the form of medallion licenses without restrictions.

Alternatives related to the method of issuance and payment:

- Issue new medallions by auction to the highest bidder without restrictions.
- Issue new medallions by auction to the highest bidder with auctions limited to current Brookline drivers.

³ It should be noted that some new medallions have been restricted to wheelchair-accessible or alternative-fuel cars. In addition, 42% of medallions in New York are limited to people who own only one medallion and who must drive the cab a certain number of shifts per year. The driving requirement applies to individual medallion owners who bought their medallion since 1990. San Francisco, which has nontransferable medallion licenses, also has a driving requirement for most of its medallion licenses.

- Issue new medallions to drivers at a set price based on qualifications such as experience and a good driving record.
- New medallion owners pay lump sum payment for the medallion value.
- New medallion owners pay monthly or quarterly fees for either a specified number of years or in perpetuity.

Stakeholder views

Drivers expressed strong preferences in this area:

- Drivers strongly desire to be able to become medallion owners and gain full control over a medallion license.
- Drivers want medallions to be reserved for current Brookline drivers to prevent outsiders from outbidding them.
- Most drivers who attended meetings with me prefer that the Town determine a pre-set price and select drivers on the basis of experience and a good record; a few drivers would prefer a lottery; few if any drivers prefer an auction approach to medallion distribution.
- Drivers prefer that the Town charge a periodic fee for medallions rather than a one-time payment, which would require a loan from a bank or other lender, a downpayment and meeting credit requirements.
- The majority of drivers attending an April meeting preferred that the fee be paid over seven years instead of a (lower) fee paid in perpetuity. Drivers are attracted to the idea of taking complete ownership of the medallion license.

Companies and affiliate owners did not have particular views on the method of distribution of medallions to drivers. Companies did, however, strongly feel that companies should also be issued medallion licenses that could be transferred individually or in small lots, as discussed on page 14.

Conclusions and implications regarding drivers gaining equity in the industry

1. The Town should issue 20% to 30% of the 187 Hackney Licenses to drivers in the form of medallion licenses. This provides experienced drivers with the opportunity to become medallion owners while companies retain control of most of cabs in operation.
2. Driver-held medallion licenses should be restricted to current Brookline drivers, ensuring that drivers are not outbid by non-drivers.
3. Drivers should pay most or all of the medallion sales price over a specified number of years. After completing these payments, they would own the medallion. It may be desirable to have a significant level of medallion fees continue after this period,

however, in order to assure the Town of a continuing revenue stream. (This option is discussed further in the recommendations.)

5. Evaluating applications from new companies.

A final and important aspect of taxi regulatory systems concerns avenues for entry of new companies. The Town needs to have a clear method for evaluating applications from potential new taxi companies and a clear policy for when or under what circumstances new companies will be considered.

In the last several years the Board has approved two new companies, Town Taxi and Eagle Cab. The Board's intent in both cases was to increase the level of competition in Brookline. The Board has also adjusted the number of cabs authorized for each company, granting Eagle 10 additional Hackney Licenses (an increase from 15 to 25) and reducing the number for Town Taxi when the company did not put all of its authorized licenses into use.

One policy challenge in terms of new companies is to balance the desirability of authorizing additional companies, and thus at least potentially increasing competition and choice in the industry, with the desirability of limiting the number of companies to achieve economies of scale and scope. In the current situation, this challenge is further complicated by having two relatively small companies with 25 or fewer cabs, neither of which achieves these economies.

A second challenge is to ensure that new companies develop into financially viable companies that meet the town's needs for dispatch service. Unfortunately, it is difficult to judge based on an application whether a company has the managerial, marketing and financial capability to develop into such a company. Reliance on application reviews is thus insufficient to ensure that companies develop in desired ways in terms of size and service.

Options considered:

- Continue current case-by-case review of new company applications.
- Put all Taxicab Business Licenses out to bid in a franchise or concession process. Both current and new companies could submit applications in this process.
- In a medallion system, medallion owners would affiliate with a radio service provider. There could be no restrictions on the number of radio service providers licensed by the Town.

Stakeholder views

Companies were not favorable toward franchise and concession systems that require them to re-bid for business licenses that expire in a certain number of years.

Drivers and affiliate owners did not have particular comments on this issue.

Conclusions and implications on authorization of new companies

1. There should be provision for entry of new companies for the purpose of strengthening the industry and strengthening competition and choice. The number of companies in Brookline should be limited, however, so that each authorized company is financially viable and has the capability of meeting customers' needs for dispatch service.
2. The process of authorizing new companies should include a probationary period in which the company has the opportunity to build its fleet size and dispatch business to a healthy and sustainable level. Companies that fail to grow into financially viable dispatch companies should be replaced with a new entrant that is given the opportunity to do so. This approach relieves the Town of the impossible task of reliably judging whether an applicant will develop into full-fledged dispatch companies, which providing new companies the opportunity to show that they can do so.

Recommendations

Recommendations are designed to achieve the following goals:

- **Develop multiple strong dispatch companies**, thus providing choice for both drivers and customers and developing a strong competitive dynamic in the industry.
- **Generate revenue to the Town based on value created by limit on the number of taxicabs.** Limiting the number of taxicabs is the appropriate public policy in a market with a mix of dispatch and taxi stand activity. Numerical limits create value for taxi companies which the Town can appropriately take steps to capture.
- **Provide opportunity for drivers to gain equity in the industry.** An important aspect to taxi regulation is ensuring that companies and drivers are treated equitably. One part of this equation is to provide drivers with the opportunity to benefit financially from long-term commitment to serving customers. The recommendations provide a means for drivers to do so in a way that will strengthen the structure of the industry.
- **Simplicity of administration.** The Town of Brookline has limited resources to oversee the taxi industry and administer the regulatory system. Recommendations to change the current system will inevitably require additional resources. It is critical to the success of the proposed changes, however, to achieve simplicity of administration as much as possible, particularly once the new regulatory system is in place. The objective of the recommendations is to concentrate additional demands on staff and the Transportation Board to a transition period and minimize the level of staff and Board resources and time required on an ongoing basis.

Recommendations are divided into four groups:

- An overview of the thrust of the recommendations
- Recommendations affecting taxi companies on an on-going basis
- Recommendations affecting taxi companies in a transition period
- Recommendations affecting drivers.

Recommendations - overview

1. Continue with a total of 187 authorized taxicabs.
2. Implement system in which a specified number of Medallion Licenses are held by drivers and cab companies and the remaining cabs are operated under Hackney Licenses held by companies.
3. Number of licenses in each category to be issued:
 - 131 Hackney Licenses issued to companies (70% of the 187 total)
 - 11 medallions issued to companies (6% of total)
 - 45 Medallion Licenses issued to drivers, 15 per year over 3 years (24% of total).
4. Medallion License holders and Hackney License holders pay fees that reflect the value of these licenses, in manner to be determined as described below.
5. Medallion Licenses are transferable under specified conditions. Hackney Licenses are not transferable.

Under the recommended system, 70% of the Town's licensed taxicabs will be operated by cab companies under Hackney Licenses as is currently the case. This approach ensures that the substantial majority of taxicab operations are controlled directly by companies. Cab companies can thus be accountable for the quality of service they provide, in particular service to the telephone order market.

The recommendations depart from the current system in that 30% of taxicabs will be operated under Medallion Licenses. Most Medallion Licenses will be issued to drivers, thus providing drivers with the opportunity to gain equity in the taxi business to which they make a vital contribution. A portion of the Medallion Licenses will be issued to companies, providing companies with an asset that has value separately from the company as a whole.

Medallion Licenses will be transferable for financial consideration. Given that the value of Medallion Licenses is created by the Town's limitation on the number of taxicabs, Medallion License holders will pay to obtain the licenses. Companies will also pay for Hackney Licenses. The value of Hackney Licenses may be lower than Medallion Licenses given the restrictions placed on Hackney Licenses described below.

Recommendations affecting taxi companies on an on-going basis

1. Replace the current system in which Taxicab Business Licenses expire annually and are renewable based on determinations of need made by the Transportation Board, with a revised system in which Taxicab Business Licenses are renewable as-of-right provided the license holder complies with all regulations.
2. In addition to as-of-right renewals, revised system includes the following changes from current regulation:

- a) Minimum of 40 taxis per company, including affiliates.
- b) Maximum number of cabs per company of 50% of the total number of company-held Hackney and Medallion Licenses after the transition is completed (50% of 142 company-held Hackney and Medallion Licenses is 71).
- c) Companies must provide data on trip and dispatch volumes, number of shifts operated by company-held Hackney and Medallion Licenses, and number of shifts operated and driver of each shift operated by affiliated cabs. Data must be submitted periodically in electronic form based on computer-assisted or fully computerized dispatch systems. Data are subject to verification at the company's expense by an independent auditor approved by the Town.

3. Establish annual review process in which the Transportation Board:

- Reviews company compliance with regulations pertaining to Taxicab Business Licenses.
- Determines when companies have met business plan benchmarks for the number of cabs and dispatch volumes (see below).
- Considers need to increase or decrease the number of Hackney Licenses issued to each company.

The most fundamental recommended change to the current taxicab regulatory system is making Taxicab Business Licenses renewable as-of-right provided that license holders comply with Town regulations. This change provides cab companies with the ability to plan for the future and make investments to build their businesses without the possibility that the Town will non-renew their Taxicab Business License for reasons outside the company's control.

Under the new system, which will be phased in, companies will be required to operate at least 40 cabs so that companies will be sufficiently large to operate a profitable dispatch service. Companies that currently have fewer than 40 cabs will be given the opportunity to phase-in increases to meet the 40-cab minimum, as described in the phase-in recommendations in the next section.

The recommendations establish a process in which the Transportation Board annually reviews the state of the industry and whether changes are needed in the number of Hackney Licenses issued to any company. The overall objective of this review is to ensure that changes in demand for taxi service translate into changes in the supply of service, i.e., the number of cabs on the street. Conducting the review annually provides the Board with the opportunity to make incremental changes in industry size as appropriate. During the transition period the Board will also compare actual company performance to business plan benchmarks that are established by the companies in the transition process, as described in the next section.

The Board needs good information for the annual reviews. The most vital information is the number of trips provided (the best available measure of demand) and number of shifts operated (the actual supply of service). Reliable information on trips and shifts should be based on computerized records kept by the companies and subject to verification by an independent party. Companies should be required to use either

relatively inexpensive computer-aided dispatch systems or the more expensive fully computerized systems, which involve installation of mobile data terminals in each cab.

Recommendations affecting taxi companies in a transition period

1. Phase-in process for new Taxicab Business Licenses:
 - a) Town establishes procedure and schedule for review of applications from current and prospective taxicab companies.
 - b) Companies file applications detailing their business plan and desired number of Hackney Licenses. Business plan includes operating benchmarks for number of taxicabs in operation and number of dispatch trips provided. Note: companies may propose “ramp up” period, e.g., to attain the 40-car minimum.
 - c) Concurrently but in a separate sealed envelope, companies file proposed fee schedule. Companies may file up to three fee schedules for three different numbers of Hackney Licenses and associated proposed fees, e.g., \$XXXX fees with 40 Hackney Licenses; \$YYYY fees with 52 Hackney Licenses and \$ZZZZ fees with 58 Hackney Licenses. Note: companies may propose “ramp-up” of fees that reflects the business plan.
 - d) Town evaluates applications based on experience and qualifications of proposing company and its officers and senior managers; proposed operation including dispatch procedures and technologies employed; proposed vehicles including make, age, clean fuels and accessibility; financial viability; and other non-fee factors. Experience in Brookline will be an important evaluation criterion.
 - e) Town then opens proposed fee schedules and calculates present value of fees.
 - f) Town selects companies based on best interests of Town taking into account the score from the non-fee evaluation and the present value of proposed fees. Town may conduct best-and-final negotiations with companies.
 - g) Current Taxicab Business Licenses and Hackney Licenses are phased out as new licenses are phased in.
 - h) Once each company is determined to have met its benchmarks for number of taxicabs in operation and number of dispatch trips provided, its Taxicab Business Licenses becomes renewable as-of-right.
 - i) In addition, once each company is determined to have met its benchmarks, 8% of Hackney Licenses issued to each company may be converted to Medallion Licenses at the company’s option. Medallion Licenses are transferable. They may be sold to drivers and become driver-held medallions or they may be sold to other companies.
2. If the Transportation Board determines that a company has not implemented its business plan as proposed, the Board shall invite applications from prospective taxicab companies for the company’s Taxicab Business License. The new license is

issued following the same competitive procedure described above for the initial issuance.

The phase-in process is a critical part of the overall recommendations to move to a system with as-of-right renewals and both Hackney and Medallion Licenses. The purpose of the phase-in is to ensure that the new system, which includes as-of-right renewals, be comprised of multiple dispatch companies that are strong financially and operationally. Because of the relative small size of some companies in the current system, it is not recommended that the Town simply convert companies as currently constituted to the new system.

Under the phase-in, companies apply for Taxicab Business Licenses that at the end of the phase-in become renewable as-of-right. This process is open to the four Brookline taxi companies, companies from outside the Town, new-company start-ups, and any group of drivers who might want to apply as an association. Given the range of potential applicants, the application and evaluation process should be competitive and serve the best interests of the Town.

Applicants will be evaluated based on their experience, the quality of service they propose to provide, financial viability and other relevant factors. Experience in Brookline will be given weight in the evaluation. Each evaluator will score the proposals based on a point system in the same fashion as the Town evaluates contractors and consultants in a competitive request for proposal process.

Once the proposals are scored, the Town will then evaluate the fees that each company proposes to pay. Companies will be allowed latitude in how they choose to structure their operation and fee proposal during the phase-in period. For example, a company might decide to ramp up from an initial 20 cabs to 45 cabs over a 2-year period, and may propose to ramp-up their fees over the course of that period.

The Town will calculate the net present value of fees proposed by each company in order to compare the value to the Town of each proposal.

Companies may submit up to three fee proposals based on up to three different numbers of Hackney Licenses. A company might have one proposal for 40 cabs, another proposal for 50 cabs and a third proposal for 60 cabs. The Town will calculate the value to the Town of each proposal.

Once the proposal and fee evaluations are completed, the Town will then select three companies based on the best interests of the Town, taking into account the evaluation score on the proposal and the value of the proposal to the Town.

Existing Taxicab Business Licenses and associated Hackney Licenses will be phased out as new licenses are issued to the selected companies, and as Medallion Licenses are issued to drivers. This phase-in period is likely to take up to two years.

The proposals from the companies will include three-year business plans detailing:

- Desired number of Hackney Licenses

- Ramp-up of the number of taxicabs (optional)
- Planned number of dispatch trips provided.
- Planned number of shifts operated.

In its annual review, the Transportation Board will evaluate each company's progress toward meeting these business plan benchmarks. Once the Board has determined that a company meets its benchmarks, the company's Taxicab Business License becomes renewable as-of-right. In addition, the company has the option of converting up to 8% of its Hackney Licenses to Medallion Licenses, which are fully transferable in the same fashion as driver-held Medallion Licenses, and subject to the same fees.

In the event that a company fails to fully implement its business plan, the Board shall invite applications for the company's Taxicab Business License. The application and review process for the replacement company would be identical to that in the initial round.

This transition process provides a way to increase the minimum fleet size to 40 and thus realize the economies of scale that are essential if the Town wants to generate value from its limitation on the number of cabs in the Town. The transition process provides a fair mechanism to set fees, an avenue for smaller companies to meet the minimum fleet size, and an opportunity for companies to own Medallion Licenses. The probationary period means that companies will need to prove out their business plan to grow into financially viable companies that meet the town's needs for dispatch service.

Recommendations affecting drivers

1. Issue 45 driver-held taxicab Medallion Licenses to Brookline drivers, 15 annually over three years.
2. Method of issuance:
 - Town establishes criteria based on years of experience driving a cab in Brookline and having a "good record." The latter will need to be defined after reviewing availability of records for complaints, traffic violations, at-fault accidents and other relevant considerations.
 - Town also establishes minimum qualifications to assure that all drivers awarded medallions are highly qualified. These minimum qualifications would use benchmarks for years of experience, motor vehicle moving violations and complaints and/or summonses.
 - Drivers submit applications.
 - Applications are reviewed and scored by the Town.
 - The drivers with the top 15 scores are offered a medallion license, provided that they meet the minimum qualifications. Drivers below the cutoff are placed on a

list of alternates. If any of the top 15 scorers decline or are found not eligible, the next driver(s) on the alternate list is offered a Medallion License.

If not enough drivers meet the minimum qualifications, the un-issued Medallion Licenses would be issued in subsequent years.

3. Provisions for driver-held Medallion Licenses:

- Must be driven by the medallion holder at least 180 six-hour shifts per year. Satisfaction of this requirement will be verified by company records (see above).
- May be leased to a second driver for a second shift.
- Medallion holder must pay medallion fees. If fees are not paid, after a predetermined period of time, driver has option of forfeiting medallion license back to the Town or transferring the license to another qualified driver. No exceptions.
- Medallion Licenses are transferable after three years for consideration to other qualified drivers. Town may levy a transfer fee.
- Two options for medallion fees:
 - (a) \$600 per month for seven years. (Present value=\$38,752 at 8% discount rate)
 - (b) Payments of \$350 per month for seven years and \$200 per month thereafter in perpetuity (Present value=\$39,888 at 8% discount rate)Note: Payments could be made monthly or quarterly (monthly times three). Fees apply to both driver and company-held medallions.

The recommendations for driver-held Medallion Licenses are designed to be workable for both Brookline drivers and the Town of Brookline. Recommendations recognize that drivers may not have the funds or creditworthiness that would be required to bid at an auction and that outsiders might outbid Brookline drivers. Recommendations also recognize the desirability of ensuring not only that Brookline drivers become medallion owners, but also that medallion owners are Brookline drivers on an ongoing basis.

Prior to issuance of Medallion Licenses to drivers, the Town will need to review available records and establish review criteria that can be supported by existing records.⁴ The Town will then invite drivers to apply for a Medallion License using a standard form and any required attachments, such as a copy of the driver's motor vehicle driving record. Applications will be scored by the Town and the top scorers will be awarded Medallion Licenses.

⁴ For a similar process in San Diego, applicants were screened and evaluated based on years of experience; written admonishments, penalties or suspensions issued by regulatory authorities; moving violations; DUI and other 2-point convictions; and recommendations from customers.

The main requirement for driver-held Medallion Licenses is that the holder must drive a minimum number of days per year. Satisfaction of this requirement will be verified with records submitted by each company. Drivers will be permitted to lease for a second shift and to lease the cab on days that they are not driving.

Medallion Licenses fees will be collected monthly or quarterly. Medallion License holders will be responsible for paying these fees. It is not the intention of these recommendations to create a debt collection burden for the Town. If for any reason a Medallion License holder does not pay required fees after a grace period, the Town will move to forfeit the license, which would then be reissued to a driver on the alternates list. Drivers who are unable to pay Medallion License fees will have the option of selling the license to another Brookline driver who meets the basic qualifications of the initial issuance. It can be expected that the sales price would reflect the portion of Medallion Fees already paid by the first driver, although the price would be set through negotiation between the two drivers.

Drivers will take full ownership of Medallion Licenses after three years. Licenses are fully transferable at that time. If any drivers default during the first three years, the Medallion License is reissued to the next alternate.

When drivers retire or leave the industry they will be responsible for selling their medallion to a qualified driver.

Two options are presented for medallion fees. Under the first option, medallion fees are completely paid off after 7 years. Under the second option, medallion fees are reduced after seven years so that the Town has ongoing revenue from this source. These two options are presented to afford the Board the policy choice of creating an ongoing revenue stream versus a revenue stream that ends after seven years.

The Town might also charge a transfer fee of medallion transfers. This fee should be set at a modest level (New York City's fee is 5%) to avoid creating undue incentive for under-the-table transactions.

Status of affiliated owners

This plan involves re-issuance of all Hackney Licenses either as Hackney Licenses or as medallions, including Hackney Licenses currently held by affiliated owners. At the end of the process there will be affiliated driver-held Medallion Licenses and company-held Medallion and Hackney Licenses only.

Affiliated owners may apply for a Taxicab Business License to become a cab company with a dispatch operation, etc. Provided that they are Brookline drivers, affiliated owners also have the option of applying for a driver-held medallion license.

Financial implications of the recommendations

The recommended system will raise substantial revenue for the Town. Actual revenue amounts are contingent on the fees submitted by companies in the transition process and the option chosen for driver-held Medallion License fees. With certain assumptions shown in Table 3, Town revenues are estimated to be \$0.5 million to \$1.0 million annually after full implementation and \$0.4 to \$0.75 million annually after the seventh year.

* * *

Implementation of these recommendations would strengthen the financial and service capacity of the industry, generate substantial revenue to the Town annually after full implementation, provide opportunity for drivers to gain equity in the industry and create a sustainable regulatory system.

Table 1. Estimated Revenue to the Town from Medallion License and Taxicab Business License Fees

	# licenses			Revenue in 3rd year	Revenue in 8th year	Present value of revenue
Total revenue to Town:						
a) \$350/\$200 monthly for Medallion Licenses; Company-held at 30% of estimated profits	187			\$500,239	\$399,439	\$5,568,807
b) \$600 monthly for Medallion Licenses; Company-held at 30% of estimated profits	187			\$668,239	\$265,039	\$5,505,199
c) \$350/\$200 monthly for Medallion Licenses; Company-held at 70% of estimated profits	187			\$853,625	\$752,825	\$10,015,576
d) \$600 monthly for Medallion Licenses; Company-held at 70% of estimated profits	187			\$1,021,625	\$618,425	\$9,951,968
	# licenses	Fee per cab: Monthly Annual		Revenue in 3 rd year	Revenue in 8 th year	Present value of revenue
Revenue from Driver-held Medallion Licenses						
Based on \$600/month for 7 years	45	\$600	\$7,200	\$324,000	\$ 0	\$1,743,849
Based on \$350/month for 7 years and \$200/month thereafter	45	\$350	\$4,200	\$189,000	\$108,000	\$1,794,962
Revenue from Company-held Medallion Licenses						
Based on \$600/month for 7 years	11	\$600	\$7,200	\$79,200	\$ 0	\$426,274
Based on \$350/month for 7 years and \$200/month thereafter	11	\$350	\$4,200	\$46,200	\$26,400	\$438,769
Revenue from Company-held Hackney Licenses						
Assume fee is equal to 30% of estimated profits	131	\$169	\$2,023	\$265,039	\$265,039	\$3,335,077
Assume fee is equal to 50% of estimated profits	131	\$281	\$3,372	\$441,732	\$441,732	\$5,558,461
Assume fee is equal to 70% of estimated profits	131	\$393	\$4,721	\$618,425	\$618,425	\$7,781,845

Note: Annual license fees to cover Town regulatory costs would be in addition to these fees and determined based on cost to Town of administering and enforcing the regulatory system.

Appendix: Trip Data Analysis

An important objective of taxicab regulation is to foster a healthy balance between the supply of taxicab service and demand for trips. An undersupply of cabs poses the obvious problem of restricting the availability of taxi service. Equally important, an oversupply of cabs is detrimental to service because fare revenue becomes spread too thinly across drivers and vehicles.

To document current trip volumes and fare revenues, Town staff collected taximeter readings from all Brookline taxicabs. Town staff arranged with each of the taxi companies to record the cumulated meter readings and odometer readings during the week of February 5, 2007 and again a week later. Meter readings were taken seven days apart with the exception of Eagle Cab, for which the readings were eight days apart.

In addition to meter readings, information was collected on how many shifts were driven during the study period, flat fare trips that are not recorded by the meters, the number of personal miles driven in the cab and the number of times the meter was cycled on/off without a passenger. Adjustments have been made in the meter data to take these factors into account.

In addition, companies supplied data on the number of calls dispatched. In some cases these data were for the study period and in other cases I have used overall averages reported in December interviews. Comparing meter readings and dispatch calls provide the basis for estimating the split between street pickups (taxi stand and hail) and dispatched trips.

Results of taximeter reading analysis

Utilization: The taximeter data analysis show a fairly high level of vehicle utilization in Brookline. Solo drivers averaged 17 trips per shift; cabs that are double shifted averaged 14 trips per shift. This is a fairly high level of trips for a dispatch-oriented environment. I've observed trip rates in similar jurisdictions in the low to mid-teens. Only larger, dense cities have substantially higher trip rates, a product of the scale efficiencies of hail markets.

About 40% of miles worked are “live” miles, e.g., carrying a passenger. This is typical of dispatch-oriented cab service.

Dispatch versus taxi stand trips: Bay State and Red Cab drivers appear to work almost entirely dispatch trips. Although they are seen on the taxi stands, apparently these drivers most often leave the stand for a dispatch trip before getting to the head of the line.

In contrast, one-third of trips by made by Eagle and Brookline Town Taxi cabs are dispatched, with the other two-thirds being a combination of taxi stand/hail pickups and cell phone calls.

Fare revenues: Solo drivers average \$230 to \$250 in fare revenues per day and semi-solo (double-shift) drivers average about \$190 per shift. These figures do not include tips.

Driver incomes: After adding an estimate for tips and subtracting lease fees and gasoline costs, driver incomes are estimated to average \$130 for double-shifted drivers and \$140 for solo drivers. These driver income levels are comparable or higher than driver incomes in other jurisdictions.⁵

It should be noted that there is great variation in driver incomes. The lower end of the range for the week that we have data was 30% to 40% below these figures and the upper end of the range was nearly double the average. To some extent, the top and bottom end of the ranges may stem from erroneous data on the number of shifts worked for each cab. However, it is quite typical to see wide ranges in driver incomes.

Taking account of the range of incomes observed, these figures are consistent with incomes reported by drivers in interviews in December.

Additional analysis of current cab service levels

In addition to taxicab utilization and driver income, the supply/demand relationship can usefully be viewed from the perspective of dispatch response times and from the results of my statistical model for the number of cabs in 118 U.S. cities.

Cab availability: There do not appear to be any systematic shortages of cabs in Brookline. Companies generally report having a sufficient number of cabs available to meet dispatch needs, the group of senior citizens we met with reported satisfactory response times, and taxi stands appear to have sufficient supply of cabs, if not oversupply. However, it should also be noted that the owner of Bay State/Red Cab states that he could keep another 20 cabs busy with new contract work if he had 20 additional Hackney Licenses.

Model results: I've developed a statistical model that relates factors affecting taxi demand to the number of cabs observed in 118 U.S. cities. The independent variables in the model are the number of households with a car available; the number of workers who commute by subway, and airport taxi passenger volumes. A paper describing this model was published in the *Journal of Public Transportation* in 2005.

Using values for Brookline, the model predicts that the Town would have 227 taxicabs compared with the actual number of 186. I would expect the model to overstate the number of cabs in the Town because of the Town's combination of suburban and urban characteristics. In the model, the number of subway commuters acts partially as a proxy for overall urban density. Brookline has some very urban features such as issues with parking availability. Yet in other ways Brookline is suburban in character and thus the subway variable in the model is likely to overestimate taxi trip demand.

⁵ By comparison, driver incomes average about \$125 in Boston, \$158 in New York City and \$114 in Alexandria, Va.

A final factor in evaluating the number of cabs in Brookline is to note the opportunity of Brookline companies to serve telephone orders from outside the Town. The extent to which the companies serve out-of-town customers is unclear. Many of the dispatch calls from Boston are Brookline residents returning home. Brookline cabs' relatively high fare may discourage potential patrons from calling a Brookline cab rather than a Boston or Cambridge cab. Drivers reported, however, that many customers prefer Brookline cabs due to the lack of a partition and that the recent increase in the fare did not affect business.

Conclusion: Balance of supply and demand for taxi service in Brookline

Overall, from this review I conclude that Brookline currently has about the right number of cabs. The most convincing information is the high utilization rates, indicating that the Town is not oversupplied with cabs, balanced with the sufficient supply of service at stands and by telephone order.