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Charlton Town Hall Space Optimization

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Interactive Qualifying Project:

Charlton Town Hall Space Optimization

An Interactive Qualifying Project (IQP) Proposal submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science

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Authorship

Amber Facchini: Amber's focus was on writing and editing the IQP report. She was in charge of contact with Robin Craver and Kara Hmielowski at Town Hall. Amber took notes during each weekly meeting and posted both the agendas and weekly reports/meeting minutes. The interview questions and corresponding analysis of the interview results were Amber's responsibility. Areas of research included the history of Charlton, the Americans with Disabilities Act, and community development block grants.

Andrea Goldstein: Andrea's focus was on creating 3D models and rendered images using Autodesk Revit. She was able to read the given construction documents and determine the changes that were being made to the building. She was in charge of contact with Curtis Meskus and Elaine Materas at Town Hall. Areas of research included case studies on space optimization in town halls and compiling a list of activities from the senior center.

Abstract

The IQP team's goal was to determine each department's space needs while simultaneously identifying potential ADA improvements in order to optimize space in Charlton's Town Hall. To accomplish these goals, the team interviewed employees from the different departments at Town Hall and filled out an ADA checklist. The team supplied Town Hall with a list of options for how to address the storage and ADA needs, as well as 3D models and rendered images of the building.

1 Introduction

The Town Hall in Charlton, MA has problems with space; employees feel that they do not have enough space. Compounding the space issue, the Town Hall would like to become more ADA compliant. There are certain hurdles that this poses; chiefly among them, there is a need and desire to install an elevator. The state has approved a grant to the Town Hall for this purpose, and much preparation needs to be done before the elevator can physically be placed in the building. Installing an elevator requires structural changes to the building, namely the walls surrounding the elevator shaft.

Adding an elevator entails adding a new entryway to a space, which can change all of the area's traffic patterns. With the new elevator in place, how will the traffic by the stairs change? What impact will the elevator have on offices located near it? Two offices in particular are located right where the elevator will come down on the lower floor; the entire lower level, to which the elevator is granting access, may need some shuffling of space to optimize it in this new dynamic.

Changes to the Town Hall are unavoidable with the addition of this elevator, so it can serve as a catalyst for further change. Needing to potentially relocate two offices can act as a ripple effect, leading to changes throughout the entire building. There is no better time to address the Town Hall's space problems than the current, particularly since Town Hall is losing some of its valuable space to the elevator shaft.

What is the value of space? Space is a finite resource, just like petroleum and metal ores; there is only so much of it available. People must work with the space available to them and use it efficiently. Space is, however, not yet as direly rare of a commodity as Earth's other finite resources. There are businesses that aim to alleviate smaller scale space needs by renting

containers to other businesses in need of space, but this option was not readily available to Town Hall due to budgeting. Therefore, the aim of this IQP was to solve Town Hall's space problems at their root - by insuring that the available space was used to its maximum potential - opposed to seeking an alternative option that only masked the real problem: space could be used more efficiently. By seeking out and addressing this fundamental problem, the team found the most economical solution as well, adhering to Town Hall's existing budget.

A key area that was addressed was the arrangement/flow of the space. Ideally, tasks should be located near their resources. This IQP sought out situations in which a department was not near or easily able to access the resources/storage that it needed, and remedied the situation as well as the given constraints of the building and existing floor plan allowed. The IQP team identified similarities between resources - how often they are accessed, by which departments they are accessed, and so on - and made storage recommendations accordingly. The team located areas of the building that were not being used to their full potential - for instance, a long, empty hallway where shelving could be installed - and made recommendations on how to increase efficiency with storage there.

It is vital to rearrange and optimize the bottom floor of the Town Hall. Adding an elevator may solve one major problem for the Town Hall, but it could create many more of a different nature. The team aimed to address these concerns before they became issues. The team smoothed the transition of adding this elevator to the best of its ability by studying the building's space and making recommendations for changes based upon the team's findings.

Members of the IQP team learned much over the course of this endeavor, particularly processes. The project process when working for a client was something relatively new to the students, but has translated into skills that will be used moving forward in life. Similarly, the

team learned how to conduct statistically proper survey interviews. Acquiring and utilizing relevant stakeholder inputs to work towards a solution is a skill that can serve many purposes and many organizations throughout life. Lastly, the team made a local impact, and has been able to contribute to something tangible in the community.

2 Background

2.1 The History of Charlton and its Church

The citizens of western Oxford, MA were dissatisfied in the mid-1700s. Every Sunday they had to travel seven miles through rough terrain, made only rougher by New England weather, in order to attend mass at the meetinghouse. The populace clamored for separation from Oxford, and a petition took form. The petition was granted in 1755, and the new town took the name of Charlton, in honor of an English baronet by the name of Sir Francis Charlton {Charlton Historical Society, [20??], A Map of the Historic Districts of Charlton Massachusetts}.

Masses were held in the residence of Ebenezer McIntire while the meetinghouse was under construction. In 1757, the citizens of Charlton voted to place the meetinghouse in the center of the town. It is believed that the first church in Charlton was completed around 1762, though improvements were still made in later years; in 1772 Jacob Davis was paid to finish the interior (Charlton Historical Society).

Below is a conceptual drawing of the first meetinghouse from the Charlton Historical Society archives. The first meetinghouse was approximately 40 feet by 50 feet and cost the equivalent of $1,412.59 to build. Of greatest interest to this IQP, this church was located in the middle of the Charlton common, right in front of the current Town Hall, which used to be the high school that the notes on the drawing mention (Charlton Historical Society).

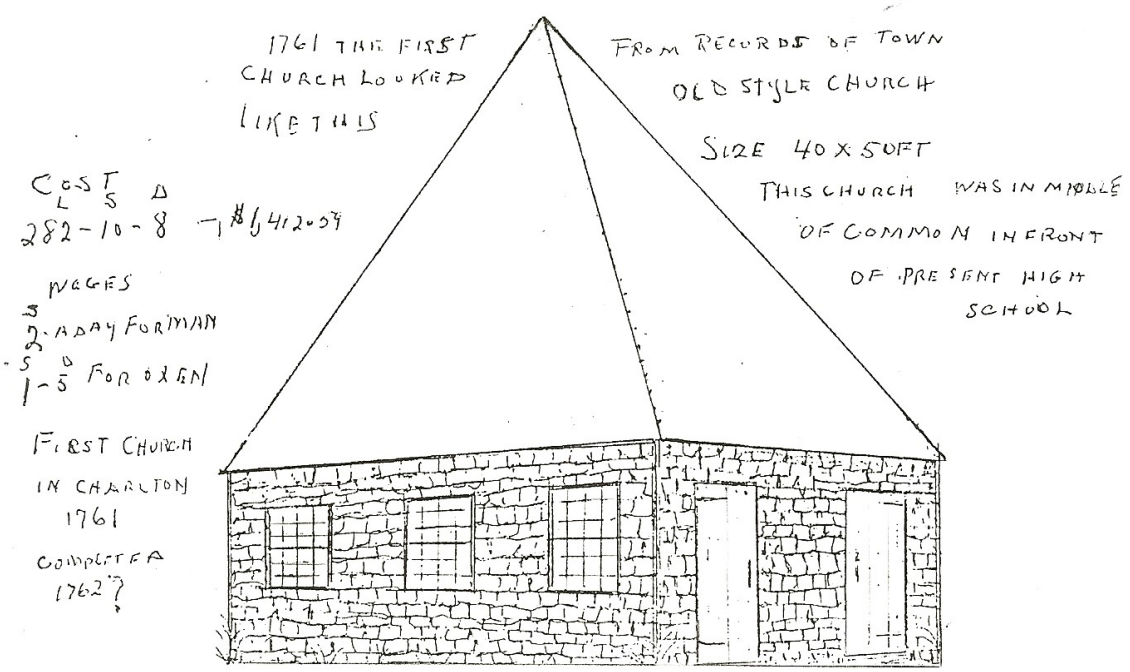

Figure 1: Conceptual Drawing of Charlton's First Meetinghouse

2.2 The History of Town Hall's Site

Historically, Town Hall and all of the buildings before it on its site were places of gathering; the tradition continues today, as the senior center is a bustling hub of activity. As history progressed, the center of the town and its church changed. In the early 1800s, John Warner Barber traveled around Massachusetts, drawing sketches of various towns for a history book he was compiling. Below is one of his sketches, featuring Charlton and the meetinghouse from around 1830. By 1857, the building would be no more; a new Universalist church was then built on its location (Charlton Historical Society).

Figure 2: A Sketch of Charlton Circa 1830

When the large Universalist church was dismantled, a smaller Universalist church was built alongside a building that served as both the high school and Town Hall {Charlton Historical Society, Charlton Historical Society Archive}.

Figure 3: The Universalist Church and High School

These buildings too did not stand the test of time; in 1922 they burned to the ground. A high school was rebuilt on the site of both these buildings. The high school underwent some modifications in 1949; two wings were added for grammar school use after the closure of the town's one-room schoolhouses. In the 1990s the high school was repurposed as the Town Hall, which was formerly located across the street and is now the town library {Charlton Historical Society, [20??], A Map of the Historic Districts of Charlton Massachusetts}.

The wings that were built for the grammar schools now house additional town offices, namely the Council on Aging. A large portion of the lower southern wing too is dedicated to the senior center.

2.3 The Spirit of Charlton

Every Labor Day marks Charlton's annual Old Home Day celebration. The festivities include fireworks, a parade, craft fair, dancing in the streets, a road race, frog jumping contest, hay bale throwing contest, train rides, a lumberjack contest, flower show, and more. A new event at the 118th Old Home Day of 2014, the firing of cannons, occurred behind the library. Old Home Day's origins date back to 1897, when neighbors and families decided to host an end of summer gathering {LaPlaca, 2014, Old Home Day offers activities through weekend}. Charlton is a family-friendly town that has a focus on building the relationships among its community. After the second World War, people began moving to Charlton because of "its rural character and small town friendliness" {Charlton Historical Society, [20??], A Map of the Historic Districts of Charlton Massachusetts}. These core characteristics are still integral to Charlton today. The senior center is similarly a friendly and welcoming atmosphere that well reflects the mood of the town, and the Town Hall's project to promote accessibility shows its desire to welcome in people from all walks of life.

2.4 Charlton Senior Center Activities

The Charlton Senior Center, located in the basement of the Charlton Town Hall, is home to many activities and resources for the seniors of Charlton. It is open Monday through Thursday from 6:30AM until 4:30PM. They offer many programs such as sewing, knitting, yoga, exercise classes, computer classes, dancing, and more every week throughout the year. The Senior Center is also home to Charlton's Council on Aging which helps serve the elders of Charlton. They provide one-on-one help to those who need it as well as host programs such as the Senior Tax Work-off Program and Seniors and Law Enforcement Together (S.A.L.T) Council {Town of Charlton, 2014, Council on Aging (COA) / Senior Center}.

There are four rooms in which the Senior Center provides public activities. The majority of the programs take place in the main dining room area, which is a large room with many small tables throughout. They move the tables to the side to host more active programs such as line dancing, chair yoga, and other exercise classes, or leave them there for large group functions such as BINGO, daily lunch and parties. There is also a multi-purpose room, which has a pool table, multiple computers, and sewing machines, where smaller groups can meet. The other two rooms are a large space behind the kitchen and an employee break room. These are both mostly used for storage, but also host a variety of meetings and presentations. In addition to these rooms, the offices of the Council on Aging Director and Outreach Coordinator are used for private meetings and smaller clinics. With all the activities going on, there is limited space to store all the materials needed for each event. Many of the side rooms are lined with shelves of boxes, all packed full of things like books, decorations, arts and crafts materials, files, and more {Materas, 2014, Senior Center Activities}.

2.5 Community Development Block Grant

The Community Development Block Grant (CDBG) program aims to help communities address physical, economical, and social needs. This program has been perpetuating for 40 years, having its origins in 1974 with Ford's Housing and Community Development Act. Between 2007 and 2013, over 300 grants were awarded, averaging $741,000. Two key highlights of the past seven years of the program include: removing accessibility barriers from buildings and constructing community facilities such as senior centers (Housing and Economic Development).

2.6 Charlton's CDBG

Charlton filed jointly with Leicester for a CDBG grant. The Charlton Town Hall Architectural Barrier Removal (CHABR) project aims to remove architectural barriers at the Town Hall in order to become more ADA compliant and to better serve elderly and disabled residents. Statistically, there is a clear need for ADA compliance; people in the 80 years and older age group are eight times more likely to have a disability than someone under the age of 15. One out of every four people between the ages of 65 and 69 have a severe disability (United States Census Bureau). The grandest component of this plan is a new main entrance to the Town Hall, complete with an elevator that can access both the upper level's town offices and the lower level's senior center. In 2010, the United States Census Bureau found that about 1 in 5 Americans have a disability - over 56 million people. Of the 56.7 million Americans with disabilities, about 30.6 million have trouble with mobility, especially on stairs; the new elevator will aid a large portion of the American populace (United States Census Bureau). Other desired improvements include improved handicap parking and walkways, better access to existing

restrooms, and an improved internal ramp in the lower level at the senior center (Pioneer Valley Planning Commission).

Durland-Van Voorhis Architects has estimated the costing of this project. Excluding delivery, the contractor estimates the construction phase of CHABR to cost $931,333. From the CDBG, Charlton received $390,396 for the project; $359,896 of that is for construction and the other $30,500 is for delivery. The remaining $571,437 will come from the town's funds (Pioneer Valley Planning Commission).

2.7 Charlton's Accessibility Plan (2007)

The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination as well as ensures equal opportunity for all Americans, particularly in regards to government services (Department of Justice). ADA built off of existing legislation of a similar nature, including the Rehabilitation Act of 1973, which included a segment on accessibility standards so that programs could be available to all, be it by relocating the program to an accessible space or making accommodations. ADA can be broken down into five sections: Employment, State and Local Government and Public Transportation, Public Accommodations and Services Operated by Private Entities, Telecommunications, and Miscellaneous Provisions. Charlton is bound by Title I (Employment) and Title III (Accommodations and Services Operated by Private Entities) in particular, and this Interactive Qualifying Project mainly looked into Title III compliance for the Town Hall (Pioneer Valley Planning Commission).

In 2007, the Town of Charlton came up with a plan with the intention of becoming more accessibility compliant. Two goals of this plan were to evaluate the town's accessibility to disabled persons and to identify physical barriers to said accessibility. Recommendations and cost estimates followed. The plan detailed different town departments and what needed to be

done to make each more accessible. For the Council on Aging, it was noted that the basic accessibility requirements were met for the senior center, but accessible routes to the Council on Aging's offices were noncompliant due to a ramp that was too steep. Actions taken at the time of the plan consisted of aiding seniors as necessary to reach the offices, and needed actions were noted on construction improvements (Pioneer Valley Planning Commission). The ramp noted in this report is still in the senior center, and the addition of the elevator will not fully remedy direct accessibility from the Center on Aging's offices to the senior center.

Town Hall, also known as the George C. McKinstry III Municipal Building, had further notes on the building as a whole instead of by department. Parking was noted to be non-compliant. The paved walkways were marked as unsafe due to severe dips and large grates. Some minor interior modifications were suggested; Braille signage, compliant coat racks, and changes to doors and knobs. Signs on the main floor protruded too far, and none of the bathrooms were fully compliant (Pioneer Valley Planning Commission). This report serves as a good basis for comparing how far the Town Hall has come towards becoming ADA compliant in the past seven years - by how many of these concerns have been addressed - to how much further it has to go.

2.8 Cisco's Space Optimization Project

Cisco is a multinational corporation based in California that specializes in selling network technology. Every office, be it in a town hall or a large corporation, can suffer problems with space. Cisco designed its office in the traditional way, with a cubicle for every employee, but discovered that this setup was not efficient. Employees were frequently on the move, be it for travel or attending meetings on site. The company found that a cubicle was empty 65% of the

time, and meeting rooms were always booked; major changes had to be done to alleviate the office's space woes (Cisco).

Much of what Cisco changed (around 2007, at the time of this case) involved adding more wireless technologies so workers could mobilize, which is not entirely relevant to this IQP; its methodologies and changes to the building layout, however, are relevant. Cisco's goal was to increase the number of employees in the office without getting more office space. To meet this goal, Cisco defined its needs, made a hypothesis, and defined its success metrics. The company acknowledged that its different employees and departments had different needs: "[The team in charge of space] created the Workspace Effectiveness project with the assumption that each of four categories of workers at Cisco-engineering, sales, call center, and general administration-has a distinct set of needs for space, services, technology, support, and policies and procedures" (Cisco). Cisco took volunteers into a test building, and took their feedback on the new layout via surveys, interviews, focus groups, and observations (Cisco).

The new layout was a connected/shared workspace; there were no cubicles, and no assigned spaces. Employees could move to an area that suited their needs and the requirements of their work. Workspaces ranged from open plazas for informal meetings and brainstorming sessions to a quiet area called "the library." Natural light penetrated farther into the building without the hindrance of cubicle walls. Though the results may be exaggerated, as a Cisco case study about Cisco may contain bias, Cisco realized a 37% savings in real estate rent as a result of this project by allowing more people to occupy the same amount of space (Cisco).

2.9 Space Optimization in Town Halls

Optimizing space for storage is an ongoing process throughout all office spaces. As the amount of paperwork and other items accumulate, the space you have for storage steadily

decreases until you start finding yourself buried in “stuff.” Space requirements are a major driving force for businesses that want to change location or build a brand new office building.

One example of this is the Town Hall and police station of Boiling Springs, North Carolina. The original building was constructed in 1920 and was a schoolhouse, which nearly mirrors the IQP's situation. Some additions to the building have been added over the years, but overall the building is outdated, in desperate need of repair, and not fit for the current needs of the Town Hall.

The town is proposing an entirely new building to be constructed to house the Town Hall offices as well as the town police barracks. The report from the town's Board of Commissioners argues that repairing or renovating the current space will not be enough to solve their issues and is not a sustainable long term solution {Boiling Springs North Carolina Board of Commissioners, 2013, Report on Existing Facilities & Recommendations To Meet Future Needs}. Security is a major issue in the police department, which is currently running in an old first grade classroom in the basement of the Town Hall. It is very easy for outsiders to walk in and see paperwork that may contain confidential information on a desk or the computer screens of officers. {Town of Boiling Springs, 2014, Press Release & Ground Breaking Invitation}. The new building will improve the flow of the building, allowing residents to easily locate the office they need to go to, as well as provide facilities for activities that are not readily possible in the current location. The new building is planned to be completed by late 2015 {Town of Boiling Springs, 2014, Press Release & Ground Breaking Invitation}. For the town of Charlton, it would not be financially wise to build a brand new building for the municipal offices. The current building, while not in ideal shape, is still in usable condition.

Another example is the city of Sioux Falls, South Dakota; in 2012 they performed a Space Needs Assessment for their City Hall and Annex. The assessment claims that "Staff has been feeling overcrowding in a number of areas and the pressure seems to be rising" {TSP Inc., 2012, 2012 Space Needs Assessment City of Sioux Falls`, South Dakota}. The city has been trying to go paperless to decrease their paper storage needs and allow for more residents to be able to complete documentation online. However, as the city continues to grow, the demands of City Hall grow with it, forcing them to start turning storage spaces into offices and cramming multiple employees into a workspace meant for only one person. The city's main goal of this Space Needs Assessment was to try to better integrate their departments and make them more efficient. Surveys were conducted within each department to determine how much space was needed then, and how much space they could potentially need in the future. The survey data also examined the need for proximity between departments so the city could reevaluate the location of all the offices. The square footage needed by each department was analyzed alongside the proximity data to allow them to relocate offices and have them all work most productively {TSP Inc., 2012, 2012 Space Needs Assessment City of Sioux Falls`, South Dakota}. The second case was more relevant to the team's study of the Charlton Town Hall. In Charlton, the employees are having a similar issue of crowding due to the limited storage and needed to have their space reevaluated. However, unlike the Sioux Falls Space Assessment, with the exception of the offices disrupted by the elevator, the team focused more on the items that needed to be stored rather than changing the location of the offices themselves. The process TSP, Inc. used for analyzing the situation in Sioux Falls served as a good example that the team emulated while carrying out this project.

3 Methodology

The team's goal in this IQP was to get to the root of Town Hall's space problems; the team aimed to determine patterns - which departments use which resources - and to determine possible relocations of resources that would aid in the more efficient use of them. Charlton's Town Hall has a lot of history to it; there used to be a church on the site, then a high school, and now the high school is the Town Hall. Changes to the structure or layout of the building kept this in mind. People are often resistant to change, and the inputs of many stakeholder groups were considered, particularly employees of the Town Hall.

The team's approach included making site visits, reviewing and altering floor plans, examining related documents, and conducting survey interviews to garner information from the employees of Town Hall about their space needs. With sufficient data for analysis, the team looked into categorizing the storage at Town Hall and making recommendations on where to store the departments' paperwork and other assorted storage. Deliverables consisted of written recommendations based on the team's findings, such as a summary of the completed ADA checklist and its corresponding recommendations. For recommended layout changes, sample floor plans created in Revit were supplied, as well as an accompanying written description.

3.1 Data Collection

3.1.1 Building Data

3.1.1.1 Site Visits

One of the first things that the team did was visit the Charlton Town Hall, located on 37 Main Street in Charlton, Massachusetts. The site visit allowed the team to meet the main people it was in contact with throughout the project as well as helped the team get a feel for what their

needs were. The team got a tour from someone who knew the building and was able to explain what each room was used for to help pinpoint where the team should be focusing its project. Many photographs of the interior and exterior of the building were taken so that the team could reference them later. The main focus of that site visit was to get more information about the senior center and its space needs. The team noted what the senior center was storing and where, and determined how much space was available for more storage.

Additional site visits were scheduled as necessary. Certain locations of the building were not accessible to the team on the day of the initial site visit. Similarly, much of the senior center's storage was seasonal decorations; visiting near different holidays gave the team a better idea of where and how the decorations were stored. Between attending Municipal Building Committee meetings and conducting survey interviews, there was a need for many visits to the location.

3.1.1.2 Plans

Useful tools for the IQP team were the first and second floor plans of the building. With an Autodesk AutoCAD file of the plans, the team created a 3D model of the building in Autodesk Revit. Revit is a building design and construction program that offers a student version, free to download. To create the model, the team imported an exploded AutoCAD file of each floor plan on its respective Revit layers. From there, the team drew in the walls by snapping to the wall edges on the AutoCAD file and placed doors, stairs, ramps, and other necessary components in their correct locations based on the underlay. In Revit, the team was able to easily, and temporarily, adjust each wall to accommodate the elevator shaft that will be installed by the town as well as was able to see how much space was affected. The 3D model allowed the team to examine the amount of space available in each room and see how one could

most efficiently store things. It was a great tool for the team to use when the team could not physically see the building.

On a two-dimensional scale, the team printed out floor plans of the town hall for use during the interviews. During each interview, the team shaded on a plan for each department the rooms where they stored their items. In addition, the team created full renderings of what different areas of the buildings would look like with the renovations. These renderings are used throughout this document and were included in the team's presentation to Town Hall.

3.1.1.3 Documents

There are checklists available online that help buildings meet compliance with Title III of the Americans with Disabilities Act (Adaptive Environments). One such checklist is included in Appendix B. Title III entails Public Accommodations and Services Operated by Private Entities; all individuals should have the opportunity to benefit from services, and structural barriers must be removed if readily achievable in order to do so. "Readily achievable" is a subjective term that depends on the size of the organization and its resources available. As resources and funds become available, it is expected that steps are taken to remove barriers (Pioneer Valley Planning Commission).

In 2007, Town Hall completed an accessibility plan, and as part of the plan identified changes that would need to be made in order to become more ADA compliant. It appears that a checklist was completed, or at least partially completed; excerpts are posted in the report of obstacles and actions to be taken to correct them (Pioneer Valley Planning Commission). The team noticed that many barriers that were mentioned had yet to be addressed, based upon the team's first site visit; the front of the building still had a ramp that was too steep, the senior center needed a new door, the elevator is finally going in, and so on. To document progress,

items mentioned on the old checklist were investigated, and a new checklist was also filled out to find any additional recommendations to determine which barriers need to be removed as of 2014. The completed checklist can be found in Appendix I, and the blank template can be found in Appendix B.

3.1.2 Interviews

To gather input from the stakeholders of Town Hall, the team decided to take the approach of survey interviews. A survey interview is more effective than a survey, as the interviewer can assist in the process by clarifying the meaning of questions and can probe the interviewee for more detail in the response (Frey and Oishi). Similarly, the results of a survey interview often more accurately portray the sample than that of a survey, merely because one cannot simply discard the survey as if it were self-administered (Frey and Oishi).

The team opted to administer the survey interviews in person, at the Town Hall, opposed to over the phone. Conducting a survey interview face-to-face allowed for visual aids and the reading of nonverbal cues (Frey and Oishi).

The means of sampling used by the team can be likened to area probability sampling. This entailed breaking down a large geographic area into numerous smaller areas, and sampling from each smaller section. In this situation, the larger area was Town Hall; the team subdivided Town Hall into its different offices, and drew a sample from each department.

There were several guidelines to keep in mind when building a list of interview questions. All questions should be related. No single question should seem different and separate from the rest; the questions should flow logically. As for difficulty, harder questions should be placed towards the middle; start off with simpler questions, build up to more difficult ones, and end on an easy note such as demographics, lest the interviewee's patience and

endurance wane (Frey and Oishi). The team kept the interviews fairly brief so as to encourage participation.

The interviews began with an introduction that included the goals of the project and a disclaimer for the interview:

The IQP team's goal was to determine how employees of Town Hall used their space. The team wanted to identify areas that were frequently accessed and know which departments used those areas. The team wanted to assess the departments' views of their situation; did they feel like they have enough space, just the right amount, or need more.

The disclaimer informed the participants that participation in this research was voluntary, and that they could end the interview at any time. They were reminded that they did not need to answer every question in the interview, and that no identifying information would be disclosed with their individual responses.

The team estimated that the interviews should be relatively quick, taking about 15 minutes per person. In most cases the interviews took about 10 minutes. Through these quick interview sessions, the team got a feel for how large each department is, how mobile its employees are, where employees need to go to get necessary resources, and the perception of how much space each department needed compared to what it had. Appendix A has a full list of the interview questions.

3.2 Analyzing Data

3.2.1 Categorizing the Storage

The main goal of the survey interviews with employees of Charlton Town Hall was to find out the storage needs and available storage space for each department. After the team completed all the interviews, the team categorized the results by department. The team filled out

a floor plan for each department, shading which rooms held each department's storage. Then the team made one master floor plan, combining the data on storage for all departments. The team analyzed the space available to each department from the floor plans and 3D model to see where more storage space could be added and how to make the current storage spaces more efficient to access. Based on this information, the team developed recommendations to the Town Hall for how they might consider reorganizing their stored items.

3.2.2 Developing Recommendations

The team combined the data it collected from multiple sources: the interviews, the ADA checklist completed in 2007, and the ADA checklist completed by the IQP team. From this data, the team developed recommendations.

The team offered Town Hall multiple options to meet each of its needs. There was variety among the options; some could be done together and some could not, both on a per room basis and for the building as a whole. The team ranked the options based on what was determined via interview data to be the town's greatest needs: paper storage (see Section 4.1.2). Priority was given to options that would help alleviate problems with lack of paper storage. With these considerations taken first, the other options gained priority by being complements that did not conflict with the prioritized paper storage. (For instance, if a room was to be repurposed for paper storage in an option with high priority, alternative uses for that room - such as use as a meeting room - would receive a lower priority, as the room cannot be used for both.) Similarly, options that were less disruptive to the building and/or less expensive took priority over options that would require significant change for a similar benefit. For ADA recommendations, there were two qualifiers for what made a recommendation optimal: ease and safety. If a recommendation were something fairly simple and inexpensive, it was optimal.

Likewise, if there could be major safety concerns if the need were not addressed, it was optimal. Where ease and safety conflicted, safety took precedence.

The rankings are binary; either the option is deemed optimal, or it is not, but is still there for consideration. Optimal recommendations are shown in bold (see Section 5.1). The options were presented to Town Hall, and feedback was taken into account in developing final conclusions.

3.3 Presentation and Feedback

On January 20, 2015 the IQP team presented its findings and preliminary recommendations to the Municipal Building Committee at Town Hall. The preliminary recommendations can be found in Appendix F. The presentation lasted for 70 minutes, and the PowerPoint and handout can be found in Appendix G. The feedback has been included in Results and Analysis, Section 4.3.

4 Results and Analysis

4.1 Interview Data

4.1.1 Perception of Space

The team polled the 11 departments on how they felt about the amount of space they had. No department felt that it had an excess of space; there were no values of 1 (have a lot of excess space) or 2 (have plenty of space).

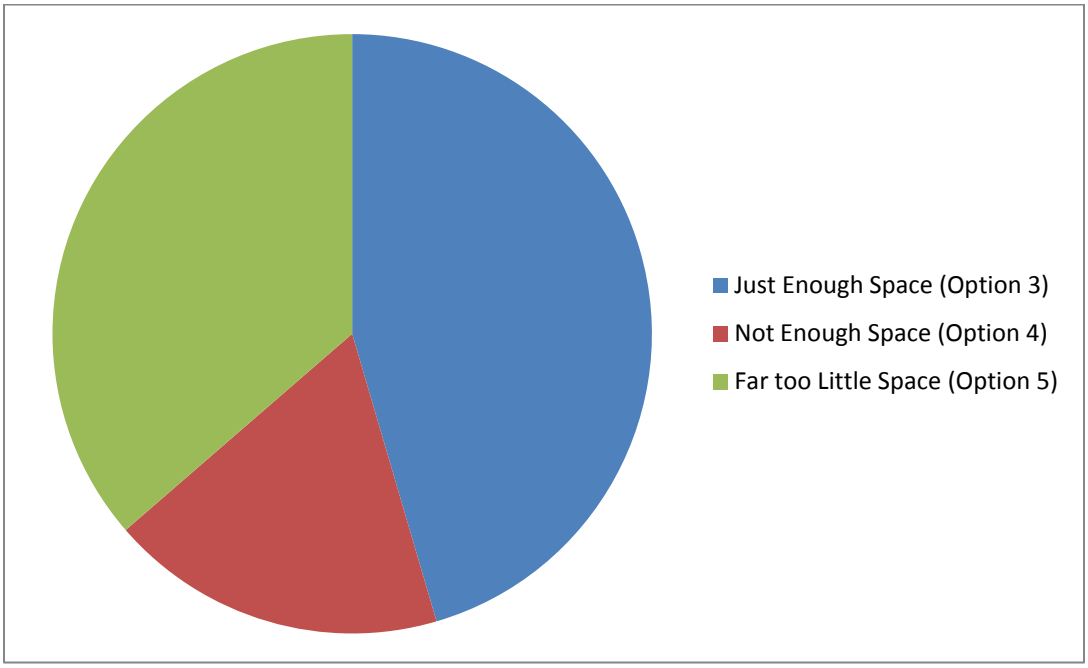

Figure 4: Pie Chart of Space Perception

With a frequency of five departments, the most popular answer (the mode) was option 3, that the department had just enough space; 45% of respondents selected this option. This dataset was more or less bimodal, however, as option 5 (far too little space) was just behind option 3 with a frequency of four departments - 36% of respondents. Two departments, 18% of respondents, fell in the middle, feeling that they had not enough space (option 4). Six of the 11 departments that volunteered information on this question felt the need for more space - those

that answered with options 4 or 5; this was a sizable chunk of the population. Additional storage space should be secured to alleviate this issue.

4.1.2 Greatest Needs

When the team asked departments what their greatest needs were, the answer was overwhelmingly the need for paper storage. Of the 10 departments that answered this question, nine explicitly stated paper storage. Of those nine, two departments cited additional needs (other types of storage, the conditions of the storage, and so on). The tenth department wanted a solution for an eyesore to the public, which was some of its paper storage that needed to be frequently accessed and was stored out in the open. In short, each department in some capacity needed adjustments to its paper storage. One department declined to answer this question, and another department could not be reached.

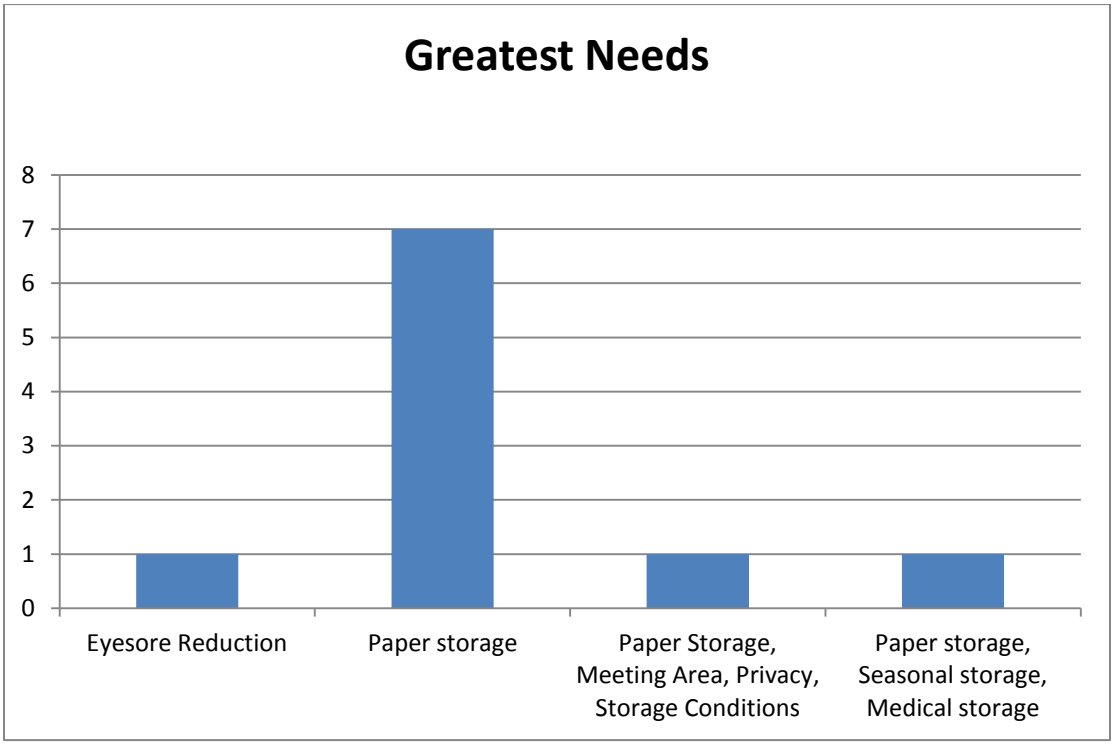

Figure 5: Histogram of Greatest Needs

4.1.3 Frequented Areas

The team wanted to determine where employees needed to move throughout the day, to gauge areas of high traffic. Similarly, the team wanted to gauge how often employees were on the move to somewhere else in the building. Overwhelmingly, employees reported spending a lot of time stationary.

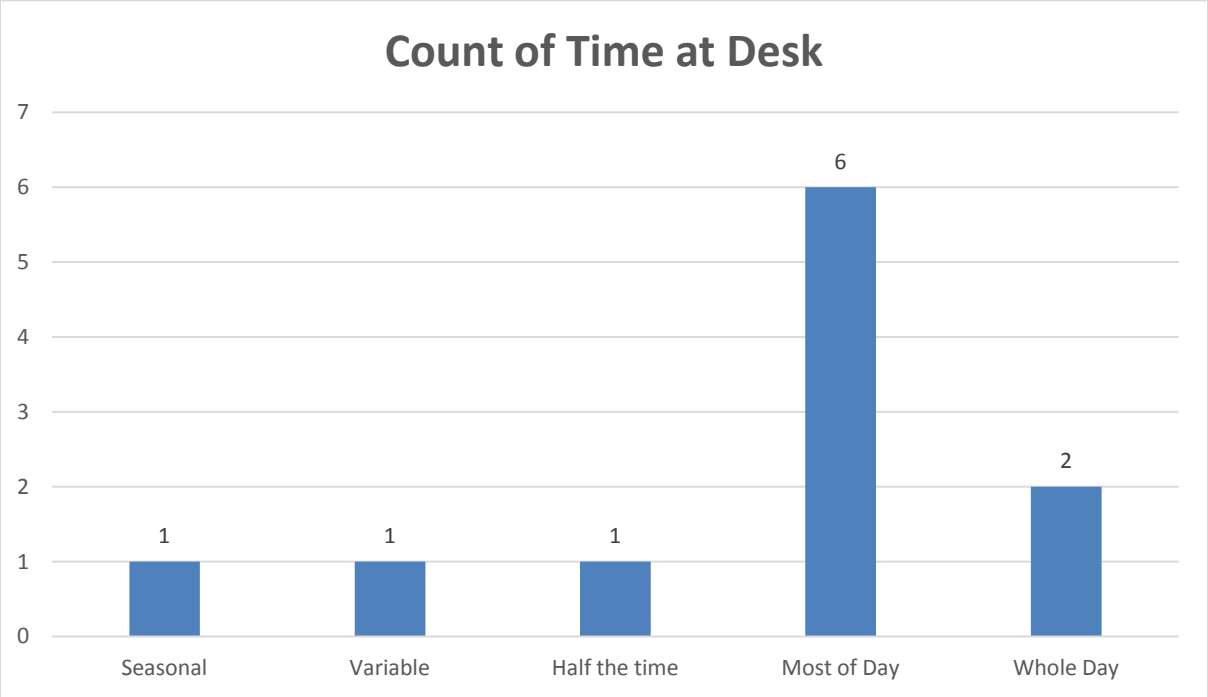

Figure 6: Histogram of Time at Desk

Of the 11 departments that answered this question, eight reported that they spend most of or the entire day at their desk. To weed out any misinformation, the team asked a question that complemented this, by asking how often the departments were away from their desks.

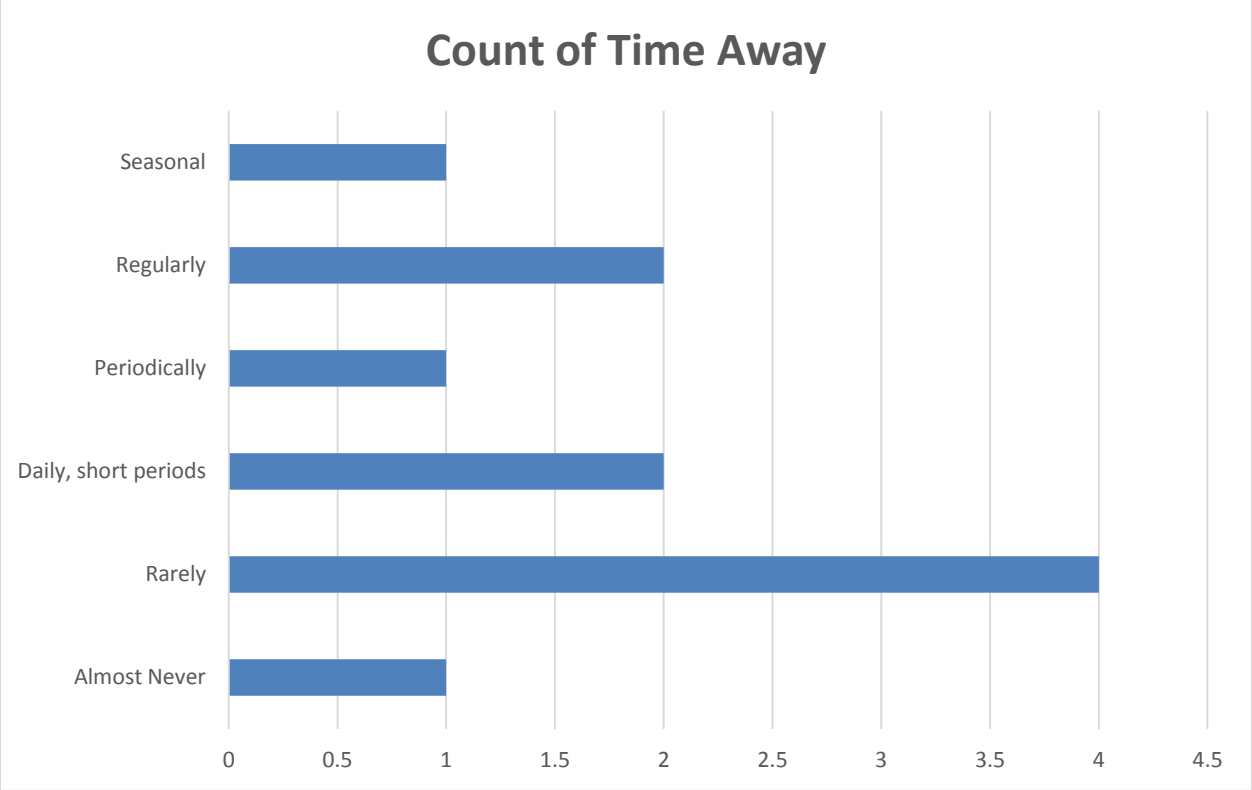

Figure 7: Histogram of Time Away from Desk

Eight departments stated that they were away either periodically, daily for short spans, rarely, or almost never. This matches up with eight departments spending the day more or less stationary.

The team also asked the departments what three locations in the building they frequented most often. Unsurprisingly, since the majority stay at their desks most of the day, the number one location was the restroom, with 40% of the respondents.

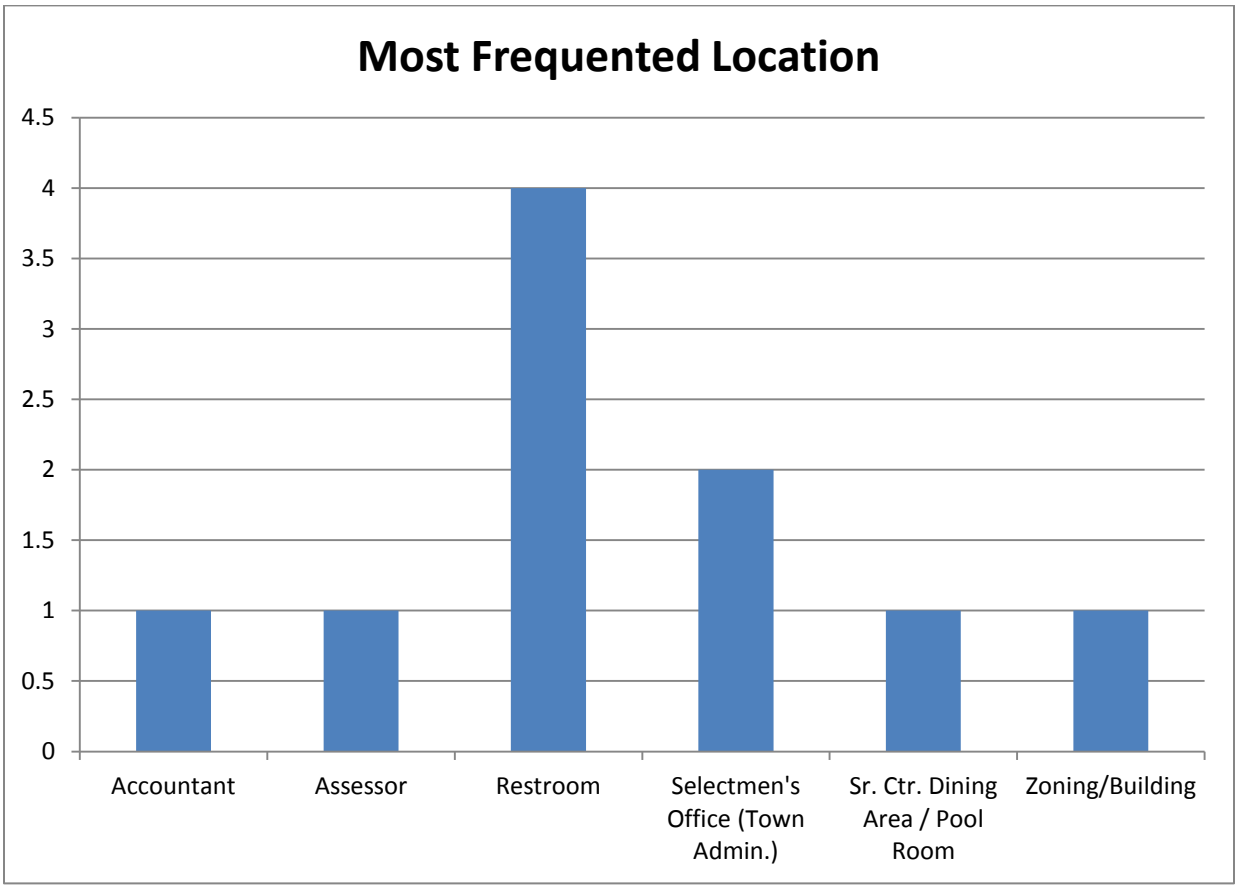

Figure 8: Histogram of Most Frequented Location

Fewer departments answered a second and third most frequented location, because they did not really have one. The second most frequented location was the Treasurer's office, and the third most frequented location was found to be the Collector's office. The histograms and corresponding charts for second and third most frequented location may be found in Appendix C.

Finally, the team grouped the top three locations for each department together to get an overall most frequented location.

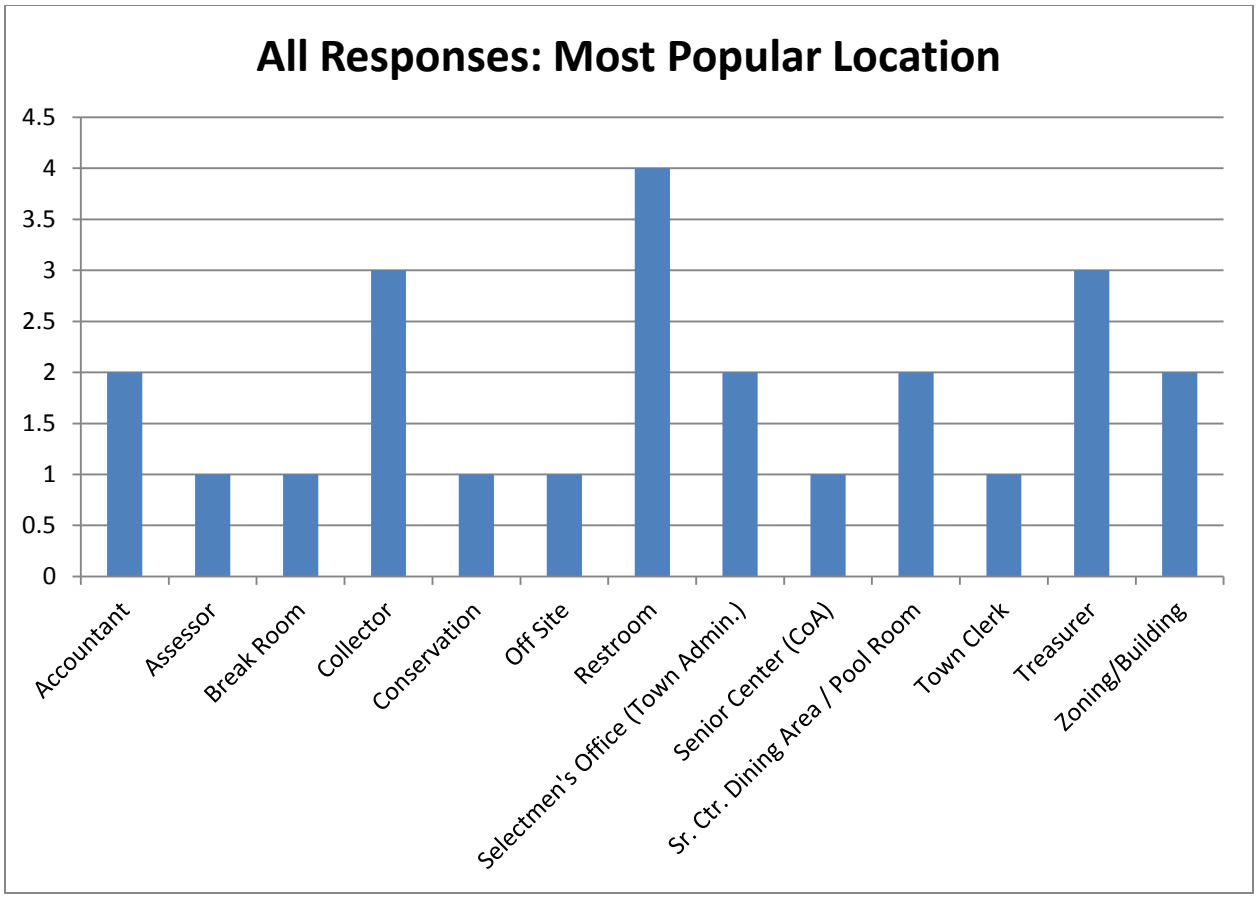

Figure 9: Histogram of Most Popular Location Based on All Responses

The restroom was still the most popular location, followed by a tie between the Collector and the Treasurer. The wing containing these two offices is a high traffic area for employees. Tied for third place, the Accountant, Selectmen's Office, Senior Center Dining Area and Pool Rooms, and Zoning/Building Inspector are scattered around the building, thus less indicative of a high traffic location.

4.2 Needs List

The following needs are the result of survey interviews conducted on November 12 and 13, 2014, an ADA checklist completed by Town Hall in 2007, an additional ADA checklist

completed by the IQP team in 2014, and feedback from the January 20, 2015 presentation to the Municipal Building Committee.

4.2.1 The Building Overall

Hallways

After public hours, there are often people wandering the halls still. With all of the paperwork stored in the building, this could potentially pose a security threat.

Stairs

The stairs, particularly the middle stairway, are bothersome because of their age, and concerns were raised that they might not meet building code.

Per the 2007 ADA plan, not all stairs are slip resistant, the railings are not compliant, and the protrusion still leads to low ceiling clearance in the middle stairway {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

Restrooms

Inaccessible restrooms do not have signs indicating the direction of accessible restrooms; this is an ADA requirement {Adaptive Environments, 1995, ADA Title III Compliance Materials}.

Offices

Many offices, even those that said they had just enough space, were virtually maxed on paper storage. More than one department mentioned issues in which they literally found

themselves crawling over boxes. Not only is this inconvenient for employees, it is an ADA problem as well. As storage sprawls into aisles, they become narrower and non-compliant.

Per ADA, there must be an accessible route to all public spaces that is at least 36" wide; this is not met inside offices, particularly Conservation and the Town Clerk, which are open to the public. {Adaptive Environments, 1995, ADA Title III Compliance Materials}

Figure 10: A Narrow Aisle in Conservation

Signage

There is no interior accessible, Braille signage in the building. This is an ADA requirement {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

4.2.2 The Lower Floor

Senior Center Main Room

Though the elevator is no longer disrupting the Outreach Coordinator's office, the nearby library area will need to be relocated. The Veteran's wall may also need to be moved. Stairs are going where the piano is located, so it too must move.

Figure 11: The Senior Center Library Area

Bulletin Boards in the senior center are not utilized as much as would be hoped for. Located underneath a TV, people look at the TV instead, and one cannot get close enough to the boards, due to tables. Additional pamphlet holders for the walls were requested.

Figure 12: The Senior Center Bulletin Board is Poorly Placed

Outreach Coordinator's Office

The entryway is noncompliant due to a 3/4" abrupt change in level surface; people must step up to enter. The room also lacks compliant signage. Both of these are ADA issues {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

Senior Center Director's Office

The Director's office lacks compliant signage. This is an ADA issue {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

Senior Center Kitchen

The kitchen is too small, and its storage spills into the room behind it. Similarly, the kitchen is noisy, and can disrupt activities.

The interior door hardware to storage cabinets are non-compliant. Per ADA, hardware should be easily operable by one hand or a closed fist (there are knobs). {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}

Senior Center Multi-Purpose Room

The senior center multipurpose room lacks compliant signage. There is also insufficient knee clearance beneath the computer tables. Both of these are ADA problems {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}

Likewise per ADA, the pool table in the Multi-purpose/Pool room does not have proper knee clearance, and there is storage under it {Adaptive Environments, 1995, ADA Title III Compliance Materials}.

Figure 13: The Pool Table and Storage Beneath

Threshold edges must be 1/4" high or less; one entrance into the multi-purpose/pool room is not - there is a 1" step into the room. This too violates ADA. {Adaptive Environments, 1995, ADA Title III Compliance Materials}

One other item that the IQP team noted was the folding tables in the multi-purpose/pool room, which can be seen in the above figure. These tables are often rolled into the main room for functions. Per the building plan, significant changes are being made to the main room; there will be stairs near the entrance to the multi-purpose room, and there will be a door at the bottom of the ramp. These changes may make it difficult to move the tables into the main room.

Lower Floor Restrooms

The lower floor's restrooms are located far for seniors with mobility problems.

The items under McKinstry Building - Remainder of Lower Building Level #5 and #6 in the 2007 ADA plan have not been addressed; fixtures are located at inaccessible heights in both then men's and ladies' restroom. This is an ADA problem {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

Tel-Data Room

The server room lacks ADA compliant signage {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}

The Employee Break Room

The Council on Aging is entrenched in the employee break room, and needs that space. The Town Hall is required to have a break room, so the Council on Aging cannot fully take over the space. The break room, in its current state, is not much of a break room - no one stays in it, but may come for coffee or to access the refrigerator. One employee from the main floor was unaware that Town Hall even had a break room.

Per ADA, the employee break room lacks compliant signage {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

Figure 14: The Employee Break Room with Bread and Cloth Belonging to the Senior Center

The Archive Room:

A concern was raised that the Board of Selectmen is not fulfilling its responsibilities regarding the conditions of the archive room. In particular, a need for humidity control was cited. After following up with a selectmen and the town administrator, as well as referencing town bylaws (sections 50-10 and 50-26), it was determined that the Board of Selectmen are not responsible for the storage conditions. Each department is in charge of its own file storage {Town of Charlton, 2014, Town Bylaws}.

Figure 15: Storage in the Archive Room

The archive room, which is used by almost every department, is also just about maxed. The archive room consists of shelving and boxes from the floor to the ceiling; some employees can have trouble reaching the upper storage. There is a rolling stepladder that was purchased for

this room, however it migrates frequently to other offices and cannot always be easily found. In addition, the building custodian helps employees access files when available.

CHIP-IN

Charlton Helping Its People In Need (CHIP-IN) is Charlton's food pantry, a non-profit that hands out food every third Saturday from 9AM until noon. The employees appreciate CHIP-IN and what it does for the community, but there were concerns raised regarding the location of CHIP-IN. One concern is that it brings rats into the building; the team cannot prove this is the only reason rats come in, as this is an older building, but food is certainly an incentive. While on site, the team saw evidence of rodents. One department was using dryer sheets to combat mice, and another mentioned finding mice in its storage.

Another concern is that CHIP-IN is an ADA nightmare as well as a fire safety problem. It was stated that many recipients of aid from CHIP-IN are elderly or otherwise disabled citizens. The line for CHIP-IN often spans the nearby staircase, and is a massive accessibility problem. This also conflicts with the aim of anonymity for recipients of CHIP-IN, as everyone on the stairway is highly visible. Similarly, the throng of people blocks the area off, so if there were to be an emergency, evacuation could be problematic; there appear to be traffic flow problems. Even with the addition of the elevator in the senior center, the area where CHIP-IN is located remains inaccessible via the back door.

CHIP-IN also lacks compliant signage, and ADA requires this {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}

4.2.3 The Main Floor

The Historical Commission

The Historical Commission is no longer situated in Town Hall, but has storage in Town Hall. The storage appears to be spread between some of the finished attic and a room on the main floor that used to belong to the Veteran's Agent.

The Hall by the Town Clerk

The water fountain spout is too high; this is an ADA requirement {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

The Hall by the Assessor

A table in the hallway by the Assessor's office lacks proper knee space per ADA requirements {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

The wall mounted keyboard shelf protrudes too far per ADA requirements {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

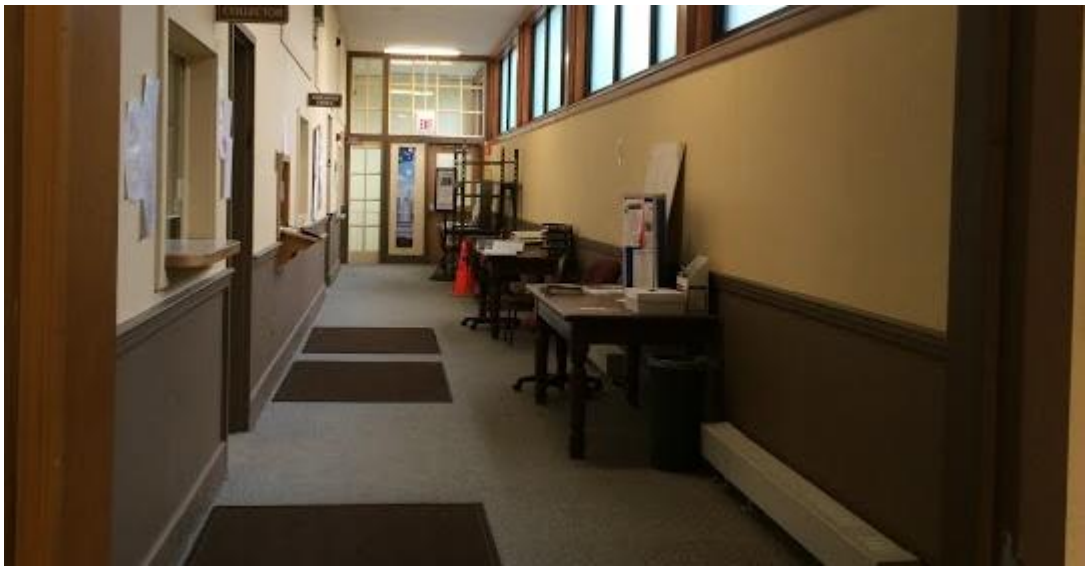

Figure 16: The Hall by the Collector and Assessor with Low Tables and Protruding Keyboard Shelf

The Town Collector and Assessor

There is a high need to communicate, but that chatter also can impede concentration on delicate work. Similarly, when discussing sensitive information, everyone can hear it, including anyone waiting for service at the window.

The Collector's and Assessor's counters' heights exceed 36", which violates ADA requirements {Pioneer Valley Planning Commission, 2014, Leic-Char CHABR FY14}.

The Collector

The Collector has storage that needs to be frequently accessed, but is an eyesore to the public; there are forms in boxes underneath the postage machine.

Figure 17: The Collector's Postage Machine

The Hall by Zoning and the Planning Board

There is a desk in the hallway that, when the chair is not pushed in, frequently causes an obstruction. This can be an ADA problem when it makes the hallway narrower than 36".

Main Floor Restrooms

It was claimed that the female employees' restroom is frequently used by the public. There was also discontent about the locations of the restrooms, by both genders; the restrooms are located apart at opposite wings. One issue that was raised is that visitors to town hall cannot always locate the proper restroom, and ask for directions, interrupting work.

4.2.4 Outside the Building

Getting into the Building / Parking

Getting into the building is problematic, and adding the elevator will not solve all of the issues. For one thing, Town Hall is located on a steep hill; though the side parking is all handicap accessible in name, in practice the gradient can make it hazardous. Parking is a major problem, not only for disabled visitors, but also for employees, larger vehicles, and anyone at all trying to enter Town Hall. There are simply not enough spaces, and sometimes the lots are so full that residents give up and drive off, unable to attend events.

There are no signs before inaccessible entrances alerting people that they are not accessible, which ADA requires {Adaptive Environments, 1995, ADA Title III Compliance Materials}.

Likewise for an ADA requirement, there must be at least 18" of clear wall space on the pull side of a door, next to the handle. The mailbox next to the exterior senior center door violates this {Adaptive Environments, 1995, ADA Title III Compliance Materials}.

Figure 18: The Exterior Senior Center Door with Obstructing Mailbox

4.2.5 Wish List Locations

Meeting Area

There is not a moderately large, private meeting area in the entire building. Employees need a good location for roundtable discussions with outside clients.

Senior Center Reception

The senior center has no place for a receptionist, and would like to have one, to be able to welcome people in. Currently, it is the job of whoever happens to be around to welcome in newcomers.

Cable Studio

The Town of Charlton is considering housing a cable studio and is looking into optimal locations for it. The cable studio needs a new location, and may have to relocate to another town if it cannot find space in Charlton.

4.3 Town Hall Feedback

The team received feedback and clarifications on a number of points. Town Hall used to store archive files in the attic, but it gets very hot up there in the summer and is thus not healthy for the documents. Similarly, there are concerns that the attic cannot support much weight, as the attic is structurally deficient. The stairs leading up the attic are also narrow, which would complicate moving file cabinets up the stairs. Based on these concerns, Archive Room Option 3 (from the preliminary recommendations) is no longer necessarily an optimal recommendation. Likewise, Archive Room Option 2 can be eliminated, as Town Hall does have a stepladder, though it tends to migrate away from the archive room. Regardless of the stepladder's location, the custodian assists with reaching files when necessary.

A new phone system is being installed in the building, which will have built-in instant messaging capabilities, so The Town Collector and Assessor Option 1 is going to be fulfilled. For the knowledge of the public as well as employees, it may be worthwhile to better mark where public spaces in offices end, as beyond that point ADA requirements are less strict (though employees too are entitled to ADA accommodations within reason).

Town Hall is obligated to have its break room, but it is seldom used. Employees prefer to eat at their desks so that they may leave earlier by working through lunch. The room currently exists as a shared space, which is fine with the majority of Town Hall. There is a possibility that

the senior center might acquire the break room for offices, as the senior center requires more office space.

For more than ten years the matter of archive storage has been pushed back, and Town Hall is aware that it must be dealt with soon. One consideration is to place a vault outside the building, nestled in the enclave in the back of the building. The cost of such a vault is estimated by Town Hall to be $250,000. Another consideration is, should another public building change locations, to convert the old building to archive storage. A committee member debated the merits of placing archive storage in the basement, where the meeting room will be, per the building plan. The IQP team is in agreement that this location could serve as a prime space for archive storage, and believes the optimal location for a meeting room may now be Meeting Area Option 2, to reconfigure the furniture in the Selectmen's Meeting Room, though there is also still a small meeting area in the lower level.

Some of the information the IQP team received was dated or otherwise inaccurate, leading to a few recommendations that cannot work. One miscommunication entailed the Historical Commission; the team was informed that the Historical Commission was vacating its office on the main floor of Town Hall, when in fact it is not. As such, this is no longer a suitable place for storage (and it is prime office space with a view). This location may yet provide a location for the VA Office, which was once housed in said room, pending some discussion between the Municipal Building Committee and the Historical Commission. Similarly, Town Hall was never considered as a location for the cable studio. The consideration of using an empty classroom is a new idea that Town Hall will look into nonetheless.

5 Conclusions

5.1 Recommendations by Room

5.1.1 The Building Overall

Per the building plan, throughout the building, accessible signage will be added. All public counters and work surfaces, including computer stations, will be made accessible. Each floor will have an accessible water fountain. The stairwell next to the VA office will be removed, and stairs will be put in next to the elevator shaft. The VA office and adjacent conference area will be merged into one room. In all bathrooms, the mirrors, grab bars, and toilets will be lowered to accessible levels {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}.

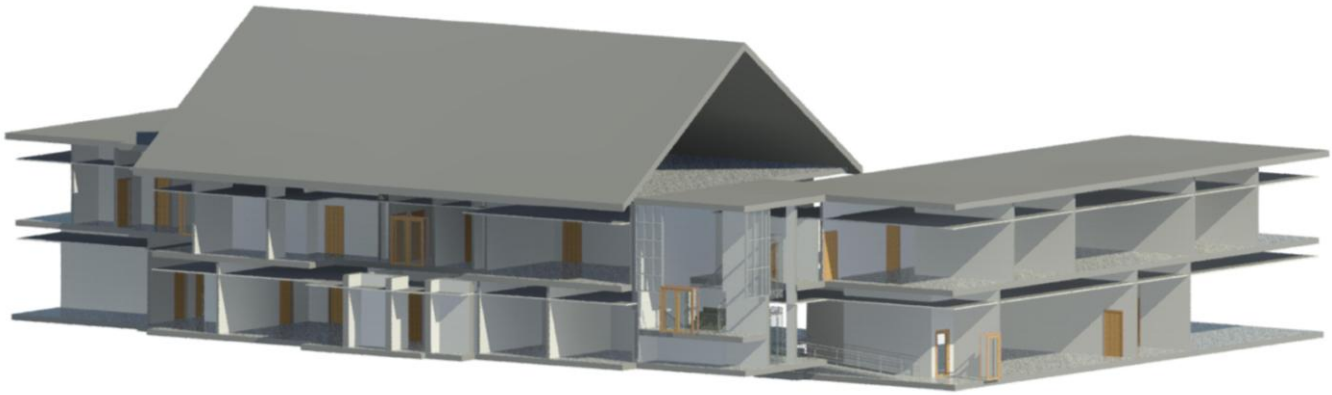

Figure 19: 3D Rendering of Town Hall with no Exterior Walls

Figure 20: A Floor Plan of Town Hall

Hallways

Option 1: Add a bell to the entrances over the door of the building so that it is known when someone exits or enters.

Figure 21: 3D Rendering of the Accessible Entrance

Option 2: After public hours, lock all doors. This may require a lot of keys to be made for town employees, which could also pose a security threat if lost.

Option 3: After public hours, lock all doors. Install a system where citizens may ring a bell to be buzzed into the building. The potential issue with a buzzer is that someone needs to be responsible for answering it.

Option 4: After public hours, lock all doors except for the door at the accessible entrance. Install a camera at the only unlocked entrance to monitor who comes and goes into the building after hours.

Restrooms

Option 1: Make every restroom accessible.

Option 2: Post signs at inaccessible restrooms with directions to accessible ones.

Offices

Option 1: Relocate boxes that sprawl into office aisles into a new storage area. Possible locations include:

Option 1A: the attic, if the items are light,

Option 1B: the meeting area in the basement,

Option 1C: the VA office,

Option 1D: the Cemetery Department's office were the Cemetery Department to relocate to the highway barn, or

Option 1E: one of the rooms that CHIP-IN occupies were CHIP-IN to relocate.

Option 2: Rearrange the layout of offices so that furniture is not in the way. The final test could be to walk around, holding a yardstick horizontally; if the yardstick bumps into any furniture, it needs to be moved so that there is 36" clearance for wheelchairs.

Option 3: Clearly mark where public space ends and private space begins in offices that are open to the public.

5.1.2 The Lower Floor

Senior Center Main Room

Per the building plans that the team acquired, an accessible coat rack will be added to the senior center. Also, the senior center entrance is being moved to the bottom of the ramp. The existing senior center ramp will be replaced with a new ramp, and stairs will be added next to it. The new ramp will have proper railings {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. Options to remedy other concerns are as follows:

Option 1: Install shelves on the wall suitable for holding books.

Option 2: When compliant coat racks are added, shorten how wide the racks are. If the coat racks are not utilized to their full capacity, that area may be able to hold a bookshelf.

Figure 22: A Possible Location for a Bookshelf

In the above figure to the left, where the box is located, could be an ideal location to nest a bookshelf into the wall, if the new coat racks take up less wall width.

Option 3: Do both of the above options to some degree.

Option 4: Relocate the Veteran's Wall to a long enough stretch of wall that can hold it all, possibly:

Option 4A: the hallway by CHIP-IN, or

Option 4B: opposite the coat racks.

Option 5: The Veteran's Wall takes up a significant amount of wall space as a block, but could be broken down into smaller chunks. One possibility is to run a single row of the pictures around the room. Another possibility would be to scatter the wall into perhaps five or so even chunks to be distributed around the cafeteria where space is available.

Figure 23: The Veteran's Wall before the Elevator

Option 6: Shift the piano over so that it is wedged next to the new set of stairs in a position similar to its current one, if the location is feasible after changes to the interior are done.

Option 7: Relocate either the bulletin board or the television so that the two are not right next to each other. Ensure there is a clear space in front of the bulletin board so that citizens can peruse it at their leisure.

Option 8: Relocate the bulletin board to where the Veteran's Wall currently is.

Option 9: Supply additional pamphlet holders for the walls, likely to be placed near the offices of the Director and Outreach Coordinator.

Figure 24: 3D Rendering of the Senior Center as Seen from the Multi-Purpose Room after Changes

Senior Center Kitchen

Option 1: Replace the cabinet knobs with more accessible hardware that can be operated by someone with limited use of his/her hands.

Option 2: Replace the cabinets with ones that can both hold more storage and be accessed by someone with limited use of his/her hands. If new cabinets can be installed that are able to hold more items, the spillover of foodstuff to the room behind the kitchen can be reduced.

Option 3: Add a modular wall to the cafeteria so that the kitchen area can be partitioned off during events. This will help control noise, as well as offer two separate spaces if there were to be two smaller events held at the same time.

Senior Center Multi-Purpose Room

Per the building plans, the floors will be removed in the basement offices and break room, to be replaced with new flooring that is level with the hallway {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. This removes the step up into both the multipurpose room and Outreach Coordinator's Office.

Option 1: Remove the board that covers the pool table. A pool table does not require knee clearance by ADA standards, but a table does.

Option 2: Elevate the legs of the pool table. The table can be no higher than 34" tall and must have knee space that is 27" high, 30" wide, and 19" deep. The storage under the table will also need to be moved to provide for the depth. Seasonal decorations in the room can be moved to the unfinished side of the attic.

Option 3: Only use the table for standing access; do not put any chairs around it.

Option 4: Store the folding tables in the room behind the kitchen, and move seasonal items from that room into the attic to make more room.

Option 5: Leave the tables where they are and address any problems with moving them as they arise.

Figure 25: The Unfinished Section of the Attic, Ideal for Senior Center Seasonal Storage

The Employee Break Room

Option 1: Give the existing break room to the Council on Aging and create a new employee break room elsewhere in the building, such as in the area that the Historical Commission is vacating, or in the room where the VA office currently is.

Option 2: Offer the Council on Aging alternative space nearby, such as in the room where the Cemetery Commission currently is, and reclaim the employee break room.

Option 3: Continue utilizing the employee break room as a shared space.

The Archive Room:

Option 1: Per Charlton's bylaws, there is no need for humidity control, and each department is in charge of its own storage. The Board of Selectmen are not responsible for the conditions in which each department stores its archive files, but it might still be worthwhile to

install a dehumidifier in the room for employees' peace of mind and protection for the documents.

Option 2: Ensure the stepladder in the archive room stays in the vicinity of the archive room.

Option 3: The attic is being severely underutilized; there is a lot of space up there that can be used for storage. There is both a finished section and an unfinished section. The finished section may be suitable for additional file storage, especially since the stairway that leads to the attic locks. The unfinished section may be suitable for storage of lighter items. To carry out this option would require additional structural support for the attic, as the attic is structurally deficient.

Option 4: Utilize the space that the building plan designates as a meeting area for additional storage instead.

Option 5: Plan to install a vault in the back of the Town Hall, in the enclave that is formed from the shape of the building. The cost for a vault is anticipates to be around $250,000.

Option 6: When the fire department, or another public building, acquires a new location, convert the old building into archive storage.

CHIP-IN

Figure 26: 3D Rendering of the Hallway by CHIP-IN with its Proposed Ramp

Per the building plans, a ramp will also be added near CHIP-IN, making that wing of the bottom floor accessible from inside the building {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. Options with this in mind follow:

Option 1: Relocate CHIP-IN to another non-profit, perhaps a church or some place that is accustomed to storing food.

Option 2: Add a ramp outside the building by CHIP-IN to make that entrance also ADA accessible. Guide traffic in such a way (and leave signs with arrows to direct the flow) that citizens do not double-back to exit from where they entered. Ensure there is enough space that the crowd does not go up the interior stairs. Consider lining up recipients inside the long hallway by CHIP-IN and having them exit via the back entrance, if it has a ramp.

Figure 27: The Door by CHIP-IN is Non-compliant

5.1.3 The Main Floor

The Town Collector and Assessor

Option 1: Use instant message software, such as provided by the new phone system, to communicate some information. This reduces the noise level so employees can better concentrate, and does not risk breaking confidentially should a member of the public at the window overhear sensitive information.

Option 2: If the problem is more of a problem of the area being too loud to concentrate, encourage headphones or install a white noise filter.

Option 3: If the problem is more of a problem of protecting confidential information, add a soundproof shutter to the window to the public. Even some cloth

curtains may help to absorb sound, and offer aesthetic appeal. One of the sewing groups from the senior center could perhaps make and donate curtains that meet the specifications for the service windows.

The Collector

Option 1: If the main issue is that the storage is unpleasant to the eye, hide it; consider placing a tablecloth on the table that holds the postage machine.

Option 2: Acquire wall storage, such as pamphlet holders, allowing the forms to still be frequently accessed but in a neater manner.

Option 3: Combine both options above; if the boxes of papers under the postage machine are moved, something else can take that space for storage, and be hidden from the public eye.

The Hall by Zoning and the Planning Board

Option 1: Remove the workstation.

Option 2: Relocate the workstation to a wider space.

Option 3: Replace the desk with a smaller desk, and rotate the workstation 90 degrees so that when the chair is pulled out, it does not decrease the clearance in the hallway. This desk could potentially be moved into the senior center to be used as a reception desk.

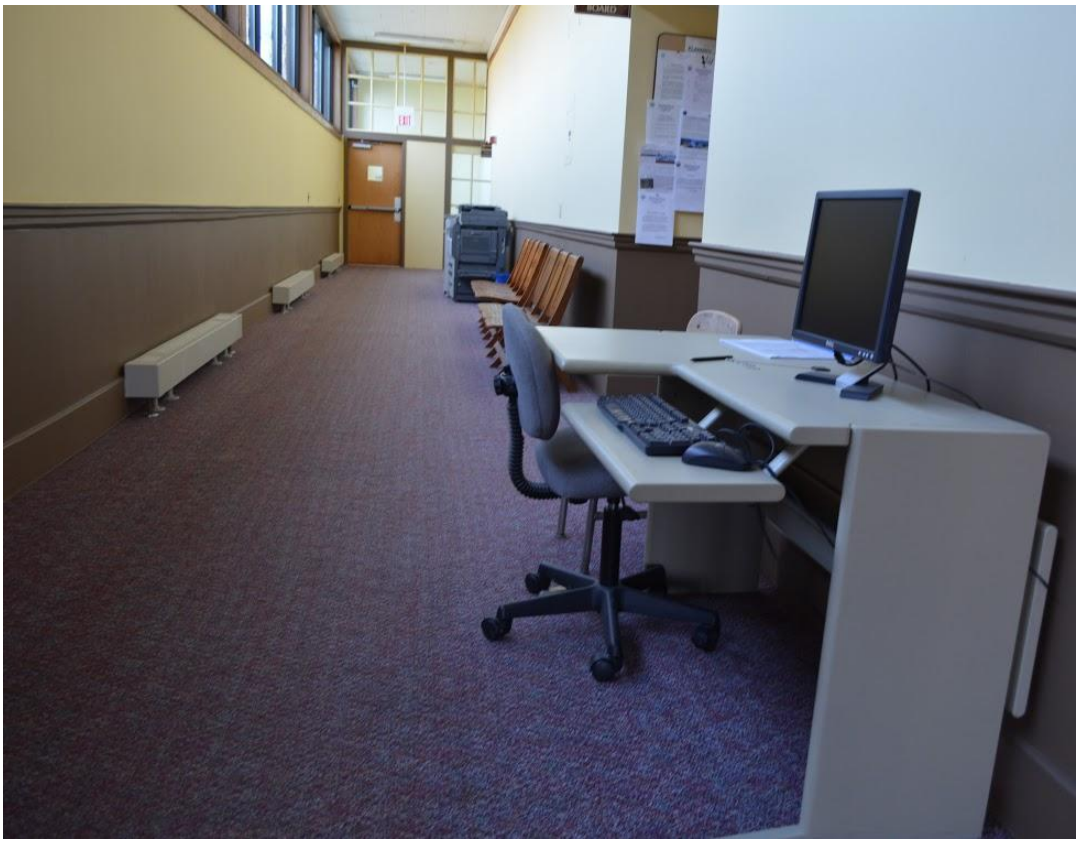

Figure 28: A Workstation that Narrows the Hallway

Main Floor Restrooms

Option 1: There already are paper signs posted that designate the employee restrooms. When accessible signage is added to all offices in the building, ensure that the bathrooms also receive signs, and include directions to the public restrooms / accessible restrooms.

Option 2: At the ladies' room, post a sign with directions to the men's room, and vice versa, so that lost citizens can find their way without distracting town employees.

5.1.4 Outside the Building

Getting into the Building / Parking

Per the building plans, handicap parking will be added by the elevator {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. The options below take this into account.

Option 1: Obtain the adjacent soccer field and convert it into more parking spaces.

Option 2: Post signs before inaccessible entrances that alert people that they are not accessible and offer directions to the accessible entrance.

Option 3: When the main entrance to the senior center is moved to the base of the ramp, do not move the mailbox next to it again. Do not place anything within 18" of the pull side of the door, next to the handle.

Option 4: Designate a larger parking space specifically for larger vehicles except for when the lot is full. This allows construction vehicles to park easier and could allow a shuttle to park, if there were to eventually be established a shuttle from, for instance, a nursing home to Town Hall.

5.1.5 Wish List Locations

Meeting Area

Option 1: Replace the furniture in the Selectmen's Meeting Room with more portable furnishings. If the room can be more easily rearranged, it could serve more purposes, such as roundtable discussions.

Option 2: If CHIP-IN were not on the lower level, a meeting area could occupy one of those two rooms.

Additional Employee Input: A private meeting area with a computer in it would also be beneficial, so that town employees in meetings with residents can access files that they might need. A projector would also be convenient.

Option 3: Use the space that will be made by combining the VA Office and existing conference room as a new, larger conference room.

Senior Center Reception

Option 1: Designate a location for a volunteer receptionist. Contact the local high school with this volunteering opportunity, particularly the school's chapter of National Honor Society (NHS). NHS, as well as many sports teams, requires a set number of volunteer hours; students could sign up to volunteer as a greeter for the senior center. Since this is not a full-time position, the students would not need much space; just a place to sit and perhaps a small desk to do homework at. Consider placing a landline at the desk.

Option 2: Play a prerecorded greeting / directions over a monitor placed near the entrance.

Option 3: Place a bell over the entrance so Deb and Elaine have an idea of how many people are coming and going.

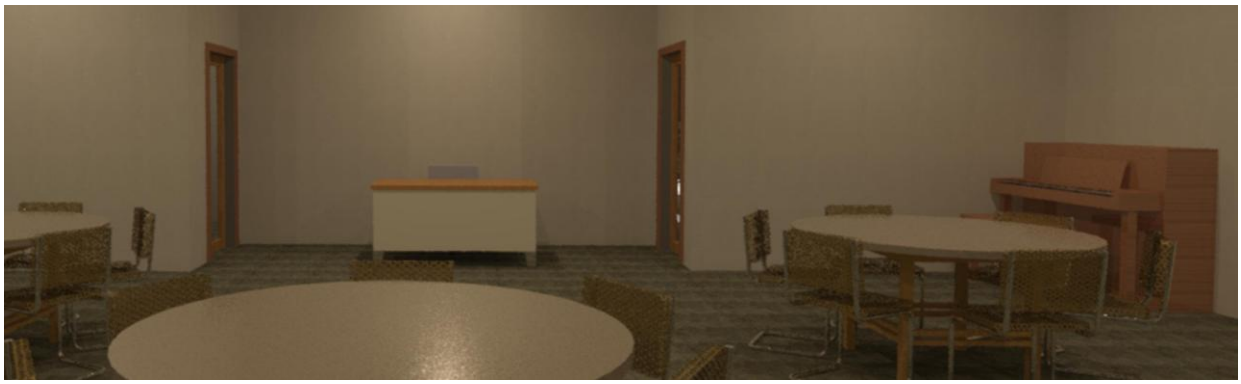

Figure 29: 3D Rendering of the Senior Center Main Room after Changes

Cable Studio

Option 1: Set the cable studio up in the office in the Highway Barn that was meant for the Cemetery Commission.

Option 2: If the Cemetery Commission were to relocate, set the cable studio up in the Cemetery Commission's old location.

Option 3: If CHIP-IN were not on the lower level, the cable studio could occupy one of those rooms.

Option 4: Set the cable studio up in the high school. This is how Auburn has its local cable studio set up, and this benefits the school as well. Students are offered a film course in which they can learn how to use the film equipment and help run programs.

5.2 Optimal Recommendations Combined

5.2.1 Problems the Building Plan Will Solve

Per the building plans, an interior ramp will be added near CHIP-IN, making that wing of the bottom floor accessible from inside the building. The floors will be removed in the basement offices and break room, to be replaced with new flooring that is level with the hallway. An accessible coat rack will be added to the senior center. Also, the senior center entrance is being moved to the bottom of the ramp. The existing senior center ramp will be replaced with a new ramp, and stairs will be added next to it. The new ramp will have proper railings {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}.

Throughout the building, accessible signage will be added. All public counters and work surfaces, including computer stations, will be made accessible. Each floor will have an accessible water fountain. The stairwell next to the VA office will be removed, and stairs will be

put in next to the elevator shaft. The VA office and adjacent conference area will be merged into one room. In all bathrooms, the mirrors, grab bars, and toilets will be lowered to accessible heights {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}.

Handicap parking will be added by the elevator {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}.

5.2.2 Additional Items to Address

In the building overall, add bells over the doors at the entrances so that it is known when someone exits or enters. Inaccessible restrooms will have signs with directions to accessible ones. Sprawling boxes in offices will be moved to storage into the basement where the conference room is. Office furniture will be rearranged to accommodate 36" of clearance for wheelchairs, at least in the public side of the offices.

In the senior center, install some shelves on the wall suitable for holding books. When compliant coat racks are added, shorten how wide the racks are and nest a bookshelf in the wall. Relocate the Veteran's Wall to the wall opposite the coat racks. Shift the piano over so that it is wedged next to the new set of stairs in a position similar to its current one, if the location is feasible after changes to the interior are done. Relocate the bulletin board to where the Veteran's Wall currently is. Supply additional pamphlet holders for the walls, likely to be placed near the offices of the director and outreach coordinator. Replace the cabinet knobs in the kitchen with more accessible hardware that can be operated by someone with limited use of his/her hands. Only use the pool table for standing access; do not put any chairs around the table. Move the folding tables that are stored in the multi-purpose room to the storage room behind the kitchen.

Elsewhere on the lower floor, relocate the Cemetery Commission to the highway barn and use its old office for additional storage. Continue using the employee break room as a shared space. Move seasonal decorations to the attic. Ensure that the stepladder stays in the archive room to aid employees in reaching the higher shelves. Add a ramp outside the building by CHIP-IN to make that entrance also ADA accessible. Guide traffic in such a way (using signs with arrows to direct the flow) that citizens do not double-back to exit from where they entered. Ensure there is enough space, by regulating the flow of traffic, that the line does not gradually snake its way up the interior stairs. Consider lining up recipients single-file inside the long hallway by CHIP-IN and having them exit via the back entrance, if a ramp is installed there. This measure should prevent traffic from flowing undirected to wherever there is standing room, which has historically been the stairs.

On the main floor, use instant message software, as supplied by the new phone system, to communicate some information. Add cloth curtains to service windows to help to absorb sound. One of the sewing groups from the senior center could perhaps make and donate curtains that meet the specifications for the service windows. Add pamphlet holders to the Collector's Office to better organize paper, and cover the table on which the postage machine lays with a tablecloth. In the hallway by the Planning Board, replace the desk with a smaller desk, and rotate the workstation 90 degrees so that when the chair is pulled out, it does not decrease the clearance in the hallway. At the ladies' room, post a sign with directions to the men's room, and vice versa, so that lost visitors can find their way without distracting town employees.

Outside the building, post signs before inaccessible entrances that alert people that they are not accessible and offer directions to the accessible entrance. When the main entrance to the senior center is moved to the base of the ramp, do not move the mailbox next to it again. Do not

place anything within 18" of the pull side of the door, next to the handle. Designate a larger parking space specifically for larger vehicles except for when the lot is full. This allows construction vehicles to park easier and could allow a shuttle to park, if there were to eventually be established a shuttle from, for instance, a nursing home to Town Hall.

For wish list locations, refurnish the Selectmen's Meeting Room with more portable furniture so that the room can serve more functions, such as roundtable discussion. Designate a location for a volunteer receptionist by the new senior center entrance. Contact the local high school with this volunteering opportunity, particularly the school's chapter of NHS, as well as sports teams. Provide a small desk and consider placing a landline at the desk. Place a bell over the entrances so that senior center personnel have an idea of how many people are coming and going. Set the cable studio up in an empty classroom at a local school.

5.3 Global Impact: Beyond Charlton

This project set out to optimize the use of space in the Town Hall of Charlton, MA. What started out as a side goal of the project were recommendations for additional ADA improvements. The IQP team very quickly realized that the two goals were closely intertwined, and sought solutions that worked towards both ends. In the end, a work plan for the coming years has been produced, to help not only with problems of storage but to also make Charlton a more accessible community. It is the hope of the IQP team that this project serves as a model for future space optimization projects, by demonstrating that accessibility needs not be sacrificed for the sake of efficiency in storage; both goals can be accomplished jointly.

Similarly, this project demonstrates the utility of 3D renderings as aids in understanding future building changes. The models that the IQP team developed gave Town Hall an accurate

picture of how the building would be altered, via changes proposed by both the building plan and the IQP team. Town Hall has been supplied with these renderings for future use. Lastly, this project demonstrates the use of taking a complete inventory of a building. Through the team's presentation, members of the Municipal Building Committee were exposed to problems that they might not otherwise have encountered. Thoroughness and tackling a problem from multiple angles both aid in the development of a complete solution.

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Appendix A: The Interview Questions

How many people are in your department?

What would you say your department's greatest needs are, in terms of storage or the access to certain things?

Do you feel like you have a lot of excess space, plenty of space, just enough space, not enough space, or far too little space?

In a typical work day, how often are you at your desk?

How often are you somewhere else, such as in meetings, traveling to another location, or retrieving something from elsewhere in the building?

What other areas do you frequent over the course of the day? A specific file area, the break room, the restroom?

In order from most to least frequent, list the top 3 locations you visit.

If you could change one thing about the building's layout, what would it be?

Are there any places in the building where items are stored in the way and impede the work that you are doing?

[Just for the offices that are being impacted by the elevator.]

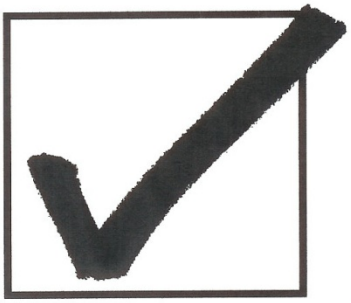
Do you prefer to work in a larger, open space, or prefer a smaller, private space?

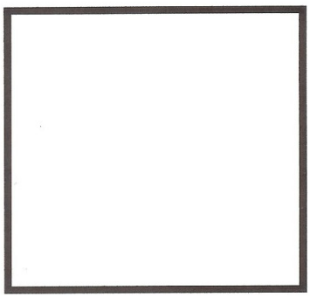
Would you be open to the concept of an open floor plan, with both offices in the same room?

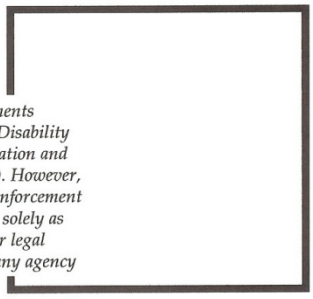
If not, what are your major concerns to sharing a space?

Appendix B: The ADA Checklist

Checklist for Existing Facilities version 2.1







The Americans with Disabilities Act Checklist for Readily Achievable Barrier Removal

August 1995

ADA TITLE III
COMPLIANCE MATERIALS

To obtain additional copies of this **checklist,** *contact your Disability and Business Technical Assistance Center. To be automaticallly connected to your regional center, call* **1-800-949-4ADA.** *This* **checklist** *may be copied as many times as desired by the Disability and Business Technical Assistance Centers for distribution to small businesses but may not be reproduced in whole or in part and sold by any other entity without written permission of Adaptive Environments, the author.*

Barrier Free Environments, Inc. and Adaptive Environments Center, Inc. are authorized by the National Institute on Disability and Rehabilitation Research (NIDRR) to develop information and materials on the Americans with Disabilities Act (ADA). However, you should be aware that NIDRR is not responsible for enforcement of the ADA. The information, presented here is intended solely as informal guidance, and is neither a determination of your legal rights or responsibilities under the Act, nor binding on any agency with enforcement responsibility under the ADA.

Checklist for Existing Facilities version 2.1

Introduction

Title III of the **Americans with Disabilities Act** requires public accommodations to provide goods and services to people with disabilities on an equal basis with the rest of the general public. The goal is to afford every individual the opportunity to benefit from our country's businesses and services, and to afford our businesses and services the opportunity to benefit from the patronage of all Americans.

The regulations require that architectural and communication barriers that are structural must be removed in public areas of **existing facilities** when their removal is **readily achievable**—in other words, easily accomplished and able to be carried out without much difficulty or expense. **Public accommodations** that must meet the barrier removal requirement include a broad range of establishments (both for-profit and nonprofit)—such as hotels, restaurants, theaters, museums, retail stores, private schools, banks, doctors' offices, and other places that serve the public. People who own, lease, lease out, or operate places of public accommodation in existing buildings are responsible for complying with the barrier removal requirement.

The removal of barriers can often be achieved by making simple changes to the physical environment. However, the regulations do not define exactly how much effort and expense are required for a facility to meet its obligation. This judgment must be made on a case-by-case basis, taking into consideration such factors as the size, type, and overall financial resources of the facility, and the nature and cost of the access improvements needed. These factors are described in more detail in the ADA regulations issued by the Department of Justice.

The process of determining what changes are readily achievable is not a one-time effort; access should be re-evaluated annually. Barrier removal that might be difficult to carry out now may be readily achievable later. Tax incentives are available to help absorb costs over several years.

Purpose of This Checklist

This checklist will help you identify accessibility problems and solutions in existing facilities in order to meet your obligations under the ADA.

The goal of the survey process is to plan how to make an existing facility more usable for people with disabilities. The Department of Justice (DOJ) recommends the development of an Implementation Plan, specifying what improvements you will make to remove barriers and when each solution will be carried out: "...Such a plan...could serve as evidence of a good faith effort to comply...."

Technical Requirements

This checklist details some of the requirements found in the ADA Standards for Accessible Design (Standards). The ADA Accessibility Guidelines (ADAAG), when adopted by DOJ, became the Standards. The Standards are part of the Department of Justice Title III Regulations, 28 CFR Part 36 (*Nondiscrimination on the basis of disability... Final Rule*). Section 36.304 of this regulation, which covers barrier removal, should be reviewed before this survey is conducted.

However, keep in mind that full compliance with the Standards is required only for new construction and alterations. The requirements are presented here as a guide to help you determine what may be readily achievable barrier removal for existing facilities. The Standards should be followed for all barrier removal unless doing so is not readily achievable. If complying with the Standards is not readily achievable, you may undertake a modification that does not fully comply, as long as it poses no health or safety risk.

In addition to the technical specifications, each item has a scoping provision, which can be found under Section 4.1 in the Standards. This section clarifies when access is required and what the exceptions may be.

Each state has its own regulations regarding accessibility. To ensure compliance with all codes, know your state and local codes and use the more stringent technical requirement for every modification you make; that is, the requirement that provides greater access for individuals with disabilities. The barrier removal requirement for existing facilities is new under the ADA and supersedes less stringent local or state codes.

What This Checklist is Not

This checklist does not cover all of the requirements of the Standards; therefore, it is **not** for facilities undergoing new construction or alterations. In addition, it does not attempt to illustrate all possible barriers or propose all possible barrier removal solutions. The Standards should be consulted for guidance in situations not covered here.

The Title III regulation covers more than barrier removal, but this checklist does **not** cover Title III's requirements for nondiscriminatory policies and practices and for the provision of auxiliary communication aids and services. The communication features covered are those that are **structural** in nature.

Priorities

This checklist is based on the four priorities recommended by the Title III regulations for planning readily achievable barrier removal projects:

Priority 1: Accessible **approach and entrance**
Priority 2: Access to **goods and services**
Priority 3: Access to **rest rooms**
Priority 4: Any **other measures** necessary

Note that the references to ADAAG throughout the checklist refer to the Standards for Accessible Design.

How to Use This Checklist

✓ **Get Organized:** Establish a time frame for completing the survey. Determine how many copies of the checklist you will need to survey the whole facility. Decide who will conduct the survey. It is strongly recommended that you invite two or three additional people, including people with various disabilities and accessibility expertise, to assist in identifying barriers, developing solutions for removing these barriers, and setting priorities for implementing improvements.

✓ **Obtain Floor Plans:** It is very helpful to have the building floor plans with you while you survey. If plans are not available, use graph paper to sketch the layout of all interior and exterior spaces used by your organization. Make notes on the sketch or plan while you are surveying.

✓ **Conduct the Survey:** Bring copies of this checklist, a clipboard, a pencil or pen, and a flexible steel tape measure. With three people surveying, one person numbers key items on the floor plan to match with the field notes, taken by a second person, while the third takes measurements. ***Be sure to record all dimensions!*** As a reminder, questions that require a dimension to be measured and recorded are marked with the ruler symbol. Think about each space from the perspective of people with physical, hearing, visual, and cognitive disabilities, noting areas that need improvement.

✓ **Summarize Barriers and Solutions:** List barriers found and ideas for their removal. Consider the solutions listed beside each question, and add your own ideas. Consult with building contractors and equipment suppliers to estimate the costs for making the proposed modifications.

✓ **Make Decisions and Set Priorities:** Review the summary with decision makers and advisors. Decide which solutions will best eliminate barriers at a reasonable cost. Prioritize the items you decide upon and make a timeline for carrying them out. Where the removal of barriers is not readily achievable, you must consider whether there are **alternative methods** for providing access that *are* readily achievable.

✓ **Maintain Documentation:** Keep your survey, notes, summary, record of work completed, and plans for alternative methods on file.

✓ **Make Changes:** Implement changes as planned. Always refer directly to the Standards and your state and local codes for complete technical requirements before making any access improvement. References to the applicable sections of the Standards are listed at the beginning of each group of questions. If you need help understanding the federal, state, or local requirements, contact your Disability and Business Technical Assistance Center.

✓ **Follow Up:** Review your Implementation Plan each year to re-evaluate whether more improvements have become readily achievable.

To obtain a copy of the Title III regulations and the Standards or other technical information, call the U.S. Dept. of Justice ADA Information Line at (800) 514-0301 Voice, (202) 514-0381 TDD, or (800) 514-0383 TDD. For questions about ADAAG, contact the Architectural and Transportation Barriers Compliance Board at (800) USA-ABLE.

QUESTIONS		POSSIBLE SOLUTIONS
Priority 1 Accessible Approach/Entrance People with disabilities should be able to arrive on the site, approach the building, and enter as freely as everyone else. At least one route of travel should be safe and accessible for everyone, including people with disabilities.	Yes No	
Route of Travel (ADAAG 4.3, 4.4, 4.5, 4.7) Is there a route of travel that does not require the use of stairs?	☐ ☐	☐ Add a ramp if the route of travel is interrupted by stairs. ☐ Add an alternative route on level ground.
Is the route of travel stable, firm and slip-resistant?	☐ ☐	☐ Repair uneven paving. ☐ Fill small bumps and breaks with beveled patches. ☐ Replace gravel with hard top.
Is the route at least 36 inches wide?	☐ ☐ ☐ width	☐ Change or move landscaping, furnishings, or other features that narrow the route of travel. ☐ Widen route.
Can all objects protruding into the circulation paths be detected by a person with a visual disability using a cane? **In order to be detected** using a cane, an object must be within 27 inches of the ground. Objects hanging or mounted overhead must be higher than 80 inches to provide clear head room. It is not necessary to remove objects that protrude less than 4 inches from the wall.	☐ ☐ ☐ distance from wall/ height	☐ Move or remove protruding objects. ☐ Add a cane-detectable base that extends to the ground. ☐ Place a cane-detectable object on the ground underneath as a warning barrier.
Do curbs on the route have curb cuts at drives, parking, and drop-offs?	☐ ☐	☐ Install curb cut. ☐ Add small ramp up to curb.
Ramps (ADAAG 4.8) Are the slopes of ramps no greater than 1:12? **Slope is given as a ratio of the height to the length.** 1:12 means for every 12 inches along the base of the ramp, the height increases one inch. For a 1:12 maximum slope, **at least** one foot of ramp length is needed for each inch of height.	☐ ☐ ☐ slope	☐ Lengthen ramp to decrease slope. ☐ Relocate ramp. ☐ If available space is limited, reconfigure ramp to include switchbacks.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Ramps, continued Do all ramps longer than 6 feet have railings on both sides?	☐	☐	☐ Add railings.
Are railings sturdy, and between 34 and 38 inches high?	☐	☐	☐ Adjust height of railing if not between 30 and 38 inches. ☐ Secure handrails in fixtures.
	height		
Is the width between railings or curbs at least 36 inches?	☐	☐	☐ Relocate the railings. ☐ Widen the ramp.
	width		
Are ramps non-slip?	☐	☐	☐ Add non-slip surface material.
Is there a 5-foot-long level landing at every 30-foot horizontal length of ramp, at the top and bottom of ramps and at switchbacks?	☐	☐	☐ Remodel or relocate ramp.
	length		
Does the ramp rise no more than 30 inches between landings?	☐	☐	☐ Remodel or relocate ramp.
	rise		
Parking and Drop-Off Areas (ADAAG 4.6) Are an adequate number of accessible parking spaces available (8 feet wide for car plus 5-foot access aisle)? For guidance in determining the appropriate number to designate, the table below gives the ADAAG requirements for new construction and alterations (for lots with more than 100 spaces, refer to ADAAG): **Total spaces** — **Accessible** 1 to 25 — 1 space 26 to 50 — 2 spaces 51 to 75 — 3 spaces 76 to 100 — 4 spaces	☐	☐	☐ Reconfigure a reasonable number of spaces by repainting stripes.
	number of accessible spaces		
	Note widths of existing accessible spaces:		
Are 8-foot-wide spaces, with minimum 8-foot-wide access aisles, and 98 inches of vertical clearance, available for lift-equipped vans? **At least one of every 8 accessible spaces** must be van-accessible (with a minimum of one van-accessible space in all cases).	☐	☐	☐ Reconfigure to provide van-accessible space(s).
	width / vertical clearance		

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Parking and Drop-Off Areas, continued Are the access aisles part of the accessible route to the accessible entrance?	☐	☐	☐ Add curb ramps. ☐ Reconstruct sidewalk.
Are the accessible spaces closest to the accessible entrance?	☐	☐	☐ Reconfigure spaces.
Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?	☐	☐	☐ Add signs, placed so that they are not obstructed by cars.
Is there an enforcement procedure to ensure that accessible parking is used only by those who need it?	☐	☐	☐ Implement a policy to check periodically for violators and report them to the proper authorities.
Entrance (ADAAG 4.13, 4.14, 4.5) If there are stairs at the main entrance, is there also a ramp or lift, or is there an alternative accessible entrance? **Do not use a service entrance as the accessible entrance** unless there is no other option.	☐	☐	☐ If it is not possible to make the main entrance accessible, create a dignified alternate accessible entrance. If parking is provided, make sure there is accessible parking near all accessible entrances.
Do all inaccessible entrances have signs indicating the location of the nearest accessible entrance?	☐	☐	☐ Install signs before inaccessible entrances so that people do not have to retrace the approach.
Can the alternate accessible entrance be used independently?	☐	☐	☐ Eliminate as much as possible the need for assistance—to answer a doorbell, to operate a lift, or to put down a temporary ramp, for example.
Does the entrance door have at least 32 inches clear opening (for a double door, at least one 32-inch leaf)?	☐ ☐ clear opening	☐	☐ Widen the door to 32 inches clear. ☐ If technically infeasible, widen to 31-3/8 inches minimum. ☐ Install offset (swing-clear) hinges.
Is there at least 18 inches of clear wall space on the pull side of the door, next to the handle? **A person using a wheelchair** or crutches needs this space to get close enough to open the door.	☐ ☐ clear space	☐	☐ Remove or relocate furnishings, partitions, or other obstructions. ☐ Move door. ☐ Add power-assisted or automatic door opener.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Entrance, continued			
 Is the threshold edge 1/4-inch high or less, or if beveled edge, no more than 3/4-inch high?	☐	☐ height	☐ If there is a single step with a rise of 6 inches or less, add a short ramp. ☐ If there is a threshold greater than 3/4-inch high, remove it or modify it to be a ramp.
 If provided, are carpeting or mats a maximum of 1/2-inch high?	☐	☐ height	☐ Replace or remove mats.
Are edges securely installed to minimize tripping hazards?	☐	☐	☐ Secure carpeting or mats at edges.
 Is the door handle no higher than 48 inches and operable with a closed fist? **The "closed fist" test for handles and controls:** Try opening the door or operating the control using only one hand, held in a fist. If you can do it, so can a person who has limited use of his or her hands.	☐	☐ height	☐ Lower handle. ☐ Replace inaccessible knob with a lever or loop handle. ☐ Retrofit with an add-on lever extension.
 Can doors be opened without too much force (exterior doors reserved; maximum is 5 lbf for *interior* doors)? **You can use an inexpensive force meter or a fish scale** to measure the force required to open a door. Attach the hook end to the doorknob or handle. Pull on the ring end until the door opens, and read off the amount of force required. If you do not have a force meter or a fish scale, you will need to judge subjectively whether the door is easy enough to open.	☐	☐ force	☐ Adjust the door closers and oil the hinges. ☐ Install power-assisted or automatic door openers. ☐ Install lighter doors.
 If the door has a closer, does it take at least 3 seconds to close?	☐	☐ seconds	☐ Adjust door closer.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Priority 2 Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain materials or services without assistance.			
Horizontal Circulation (ADAAG 4.3) Does the accessible entrance provide direct access to the main floor, lobby, or elevator?	☐	☐	☐ Add ramps or lifts. ☐ Make another entrance accessible.
Are all public spaces on an accessible route of travel?	☐	☐	☐ Provide access to all public spaces along an accessible route of travel.
Is the accessible route to all public spaces at least 36 inches wide?	☐	☐	☐ Move furnishings such as tables, chairs, display racks, vending machines, and counters to make more room.
Is there a 5-foot circle or a T-shaped space for a person using a wheelchair to reverse direction?	☐	☐	☐ Rearrange furnishings, displays, and equipment.
Doors (ADAAG 4.13) Do doors into public spaces have at least a 32-inch clear opening?	☐	☐	☐ Install offset (swing-clear) hinges. ☐ Widen doors.
On the pull side of doors, next to the handle, is there at least 18 inches of clear wall space so that a person using a wheelchair or crutches can get near to open the door?	☐	☐	☐ Reverse the door swing if it is safe to do so. ☐ Move or remove obstructing partitions.
Can doors be opened without too much force (5 lbf maximum for interior doors)?	☐	☐	☐ Adjust or replace closers. ☐ Install lighter doors. ☐ Install power-assisted or automatic door openers.
Are door handles 48 inches high or less and operable with a closed fist?	☐	☐	☐ Lower handles. ☐ Replace inaccessible knobs or latches with lever or loop handles. ☐ Retrofit with add-on levers. ☐ Install power-assisted or automatic door openers.
Are all threshold edges 1/4-inch high or less, or if beveled edge, no more than 3/4-inch high?	☐	☐	☐ If there is a threshold greater than 3/4-inch high, remove it or modify it to be a ramp. ☐ If between 1/4- aand 3/4-inch high, add bevels to both sides.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Rooms and Spaces (ADAAG 4.2, 4.4, 4.5) Are all aisles and pathways to materials and services at least 36 inches wide?	☐	☐ width	☐ Rearrange furnishings and fixtures to clear aisles.
Is there a 5-foot circle or T-shaped space for turning a wheelchair completely?	☐	☐ width	☐ Rearrange furnishings to clear more room.
Is carpeting low-pile, tightly woven, and securely attached along edges?	☐	☐	☐ Secure edges on all sides. ☐ Replace carpeting.
In circulation paths through public areas, are all obstacles cane-detectable (located within 27 inches of the floor or higher than 80 inches, or protruding less than 4 inches from the wall)?	☐	☐ height/ protrusion	☐ Remove obstacles. ☐ Install furnishings, planters, or other cane-detectable barriers underneath.
Emergency Egress (ADAAG 4.28) If emergency systems are provided, do they have both flashing lights and audible signals?	☐	☐	☐ Install visible and audible alarms. ☐ Provide portable devices.
Signage for Goods and Services (ADAAG 4.30) Different requirements apply to different types of signs.			
If provided, do signs and room numbers designating permanent rooms and spaces where goods and services are provided comply with the appropriate requirements for such signage?	☐	☐	☐ Provide signs that have raised letters, Grade II Braille, and that meet all other requirements for permanent room or space signage. (See ADAAG 4.1.3(16) and 4.30.)
• Signs mounted with centerline 60 inches from floor.	Y ☐	N ☐ height	
• Mounted on wall adjacent to latch side of door, or as close as possible.	☐	☐	
• Raised characters, sized between 5/8 and 2 inches high, with high contrast (for room numbers, rest rooms, exits).	☐	☐ character height	
• Brailled text of the same information.	☐	☐	
• If pictogram is used, it must be accompanied by raised characters and braille.	☐	☐	

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Directional and Informational Signage The following questions apply to directional and informational signs that fall under Priority 2.			
If mounted above 80 inches, do they have letters at least 3 inches high, with high contrast, and non-glare finish?	☐	☐ letter height	☐ Review requirements and replace signs as needed, meeting the requirements for character size, contrast, and finish.
Do directional and informational signs comply with legibility requirements? (Building directories or temporary signs need not comply.)	☐	☐	☐ Review requirements and replace signs as needed.
Controls (ADAAG 4.27) Are all controls that are available for use by the public (including electrical, mechanical, cabinet, game, and self-service controls) located at an accessible height? **Reach ranges:** The maximum height for a side reach is 54 inches; for a forward reach, 48 inches. The minimum reachable height is 15 inches for a front approach and 9 inches for a side approach.	☐	☐ height	☐ Relocate controls.
Are they operable with a closed fist?	☐	☐	☐ Replace controls.
Seats, Tables, and Counters (ADAAG 4.2, 4.32, 7.2) Are the aisles between fixed seating (other than assembly area seating) at least 36 inches wide?	☐	☐ width	☐ Rearrange chairs or tables to provide 36-inch aisles.
Are the spaces for wheelchair seating distributed throughout?	☐	☐	☐ Rearrange tables to allow room for wheelchairs in seating areas throughout the area. ☐ Remove some fixed seating.
Are the tops of tables or counters between 28 and 34 inches high?	☐	☐ height	☐ Lower part or all of high surface. ☐ Provide auxiliary table or counter.
Are knee spaces at accessible tables at least 27 inches high, 30 inches wide, and 19 inches deep?	☐	☐ height / width / depth	☐ Replace or raise tables.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Seats, Tables, and Counters, continued  At each type of cashier counter, is there a portion of the main counter that is no more than 36 inches high?	☐	☐	☐ Provide a lower auxiliary counter or folding shelf. ☐ Arrange the counter and surrounding furnishings to create a space to hand items back and forth.
	☐ height		
 Is there a portion of food-ordering counters that is no more than 36 inches high, or is there space at the side for passing items to customers who have difficulty reaching over a high counter?	☐	☐	☐ Lower section of counter. ☐ Arrange the counter and surrounding furnishings to create a space to pass items.
	☐ height		
Vertical Circulation (ADAAG 4.1.3(5), 4.3) Are there ramps, lifts, or elevators to all public levels?	☐	☐	☐ Install ramps or lifts. ☐ Modify a service elevator. ☐ Relocate goods or services to an accessible area.
On each level, if there are stairs between the entrance and/or elevator and essential public areas, is there an accessible alternate route?	☐	☐	☐ Post clear signs directing people along an accessible route to ramps, lifts, or elevators.
Stairs (ADAAG 4.9) The following questions apply to stairs connecting levels *not* serviced by an elevator, ramp, or lift.			
Do treads have a non-slip surface?	☐	☐	☐ Add non-slip surface to treads.
Do stairs have continuous rails on both sides, with extensions beyond the top and bottom stairs?	☐	☐	☐ Add or replace handrails if possible within existing floor plan.
Elevators (ADAAG 4.10) Are there both visible and verbal or audible door opening/closing and floor indicators (one tone = up, two tones = down)?	☐	☐	☐ Install visible and verbal or audible signals.
 Are the call buttons in the hallway no higher than 42 inches?	☐	☐	☐ Lower call buttons. ☐ Provide a permanently attached reach stick.
	☐ height		
Do the controls inside the cab have raised and braille lettering?	☐	☐	☐ Install raised lettering and braille next to buttons.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Elevators, continued Is there a sign on both door jambs at every floor identifying the floor in raised and braille letters?	☐	☐	☐ Install tactile signs to identify floor numbers, at a height of 60 inches from floor.
If an emergency intercom is provided, is it usable without voice communication?	☐	☐	☐ Modify communication system.
Is the emergency intercom identified by braille and raised letters?	☐	☐	☐ Add tactile identification.
Lifts (ADAAG 4.2, 4.11) Can the lift be used without assistance? If not, is a call button provided?	☐	☐	☐ At each stopping level, post clear instructions for use of the lift. ☐ Provide a call button.
 Is there at least 30 by 48 inches of clear space for a person in a wheelchair to approach to reach the controls and use the lift?	☐	☐ clear space	☐ Rearrange furnishings and equipment to clear more space.
 Are controls between 15 and 48 inches high (up to 54 inches if a side approach is possible)?	☐	☐ height	☐ Move controls.

Priority 3 Usability of Rest Rooms

When rest rooms are open to the public, they should be accessible to people with disabilities.

Getting to the Rest Rooms (ADAAG 4.1) If rest rooms are available to the public, is at least one rest room (either one for each sex, or unisex) fully accessible?	☐	☐	☐ Reconfigure rest room. ☐ Combine rest rooms to create one unisex accessible rest room.
Are there signs at inaccessible rest rooms that give directions to accessible ones?	☐	☐	☐ Install accessible signs.
Doorways and Passages (ADAAG 4.2, 4.13, 4.30) Is there tactile signage identifying rest rooms? **Mount signs on the wall**, on the latch side of the door, complying with the requirements for permanent signage. Avoid using ambiguous symbols in place of text to identify rest rooms.	☐	☐	☐ Add accessible signage, placed to the side of the door, 60 inches to centerline (not on the door itself).

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Doorways and Passages, continued Are pictograms or symbols used to identify rest rooms, and, if used, are raised characters and braille included below them?	☐	☐	☐ If symbols are used, add supplementary verbal signage with raised characters and braille below pictogram symbol.
 Is the doorway at least 32 inches clear?	☐ ☐ clear width		☐ Install offset (swing-clear) hinges. ☐ Widen the doorway.
 Are doors equipped with accessible handles (operable with a closed fist), 48 inches high or less?	☐ ☐ height		☐ Lower handles. ☐ Replace knobs or latches with lever or loop handles. ☐ Add lever extensions. ☐ Install power-assisted or automatic door openers.
 Can doors be opened easily (5 lbf maximum force)?	☐ ☐ force		☐ Adjust or replace closers. ☐ Install lighter doors. ☐ Install power-assisted or automatic door openers.
 Does the entry configuration provide adequate maneuvering space for a person using a wheelchair? **A person in a wheelchair** needs 36 inches of clear width for forward movement, and a 5-foot diameter or T-shaped clear space to make turns. A minimum distance of 48 inches clear of the door swing is needed between the two doors of an entry vestibule.	☐ ☐ clear width		☐ Rearrange furnishings such as chairs and trash cans. ☐ Remove inner door if there is a vestibule with two doors. ☐ Move or remove obstructing partitions.
 Is there a 36-inch-wide path to all fixtures?	☐ ☐ width		☐ Remove obstructions.
Stalls (ADAAG 4.17) Is the stall door operable with a closed fist, inside and out?	☐ ☐		☐ Replace inaccessible knobs with lever or loop handles. ☐ Add lever extensions.
 Is there a wheelchair-accessible stall that has an area of at least 5 feet by 5 feet, clear of the door swing, OR is there a stall that is less accessible but that provides greater access than a typical stall (either 36 by 69 inches or 48 by 69 inches)?	☐ ☐ length / width		☐ Move or remove partitions. ☐ Reverse the door swing if it is safe to do so.

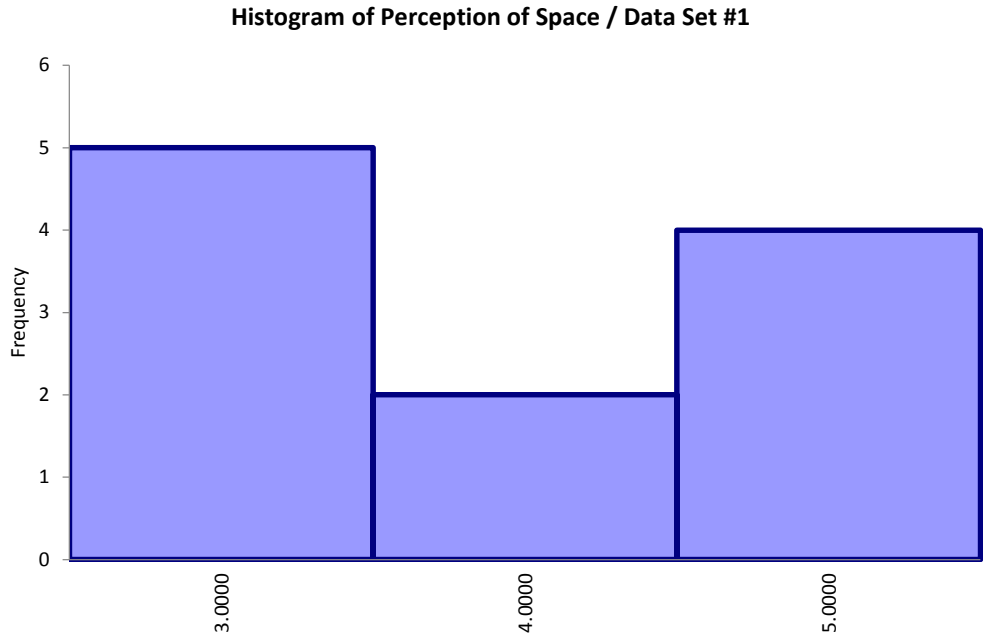
QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Stalls, continued In the accessible stall, are there grab bars behind and on the side wall nearest to the toilet?	☐	☐	☐ Add grab bars.
Is the toilet seat 17 to 19 inches high? height	☐	☐	☐ Add raised seat.
Lavatories (ADAAG 4.19, 4.24) Does one lavatory have a 30-inch-wide by 48-inch-deep clear space in front? clear space **A maximum of 19 inches of the required depth may be under the lavatory.**	☐	☐	☐ Rearrange furnishings. ☐ Replace lavatory. ☐ Remove or alter cabinetry to provide space underneath. ☐ Make sure hot pipes are covered. ☐ Move a partition or wall.
Is the lavatory rim no higher than 34 inches? height	☐	☐	☐ Adjust or replace lavatory.
Is there at least 29 inches from the floor to the bottom of the lavatory apron (excluding pipes)? height	☐	☐	☐ Adjust or replace lavatory.
Can the faucet be operated with one closed fist?	☐	☐	☐ Replace with paddle handles.
Are soap and other dispensers and hand dryers within reach ranges (see page 7) and usable with one closed fist?	☐	☐	☐ Lower dispensers. ☐ Replace with or provide additional accessible dispensers.
Is the mirror mounted with the bottom edge of the reflecting surface 40 inches high or lower? height	☐	☐	☐ Lower or tilt down the mirror. ☐ Add a larger mirror anywhere in the room.
Priority 4 Additional Access *Note that this priority is for items not required for basic access in the first three priorities.* When amenities such as drinking fountains and public telephones are provided, they should also be accessible to people with disabilities.			
Drinking Fountains (ADAAG 4.15) Is there at least one fountain with clear floor space of at least 30 by 48 inches in front? clear space	☐	☐	☐ Clear more room by rearranging or removing furnishings.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Drinking Fountains, continued			
Is there one fountain with its spout no higher than 36 inches from the ground, and another with a standard height spout (or a single "hi-lo" fountain)?	☐	☐ height	☐ Provide cup dispensers for fountains with spouts that are too high. ☐ Provide accessible cooler.
Are controls mounted on the front or on the side near the front edge, and operable with one closed fist?	☐	☐	☐ Replace the controls.
Is each water fountain cane-detectable (located within 27 inches of the floor or protruding into the circulation space less than 4 inches from the wall?	☐	☐ height/ protrusion	☐ Place a planter or other cane-detectable barrier on each side at floor level.
Telephones (ADAAG 4.31)			
If pay or public use phones are provided, is there clear floor space of at least 30 by 48 inches in front of at least one?	☐	☐ clear space	☐ Move furnishings. ☐ Replace booth with open station.
Is the highest operable part of the phone no higher than 48 inches (up to 54 inches if a side approach is possible)?	☐	☐ height	☐ Lower telephone.
Does the phone protrude no more than 4 inches into the circulation space?	☐	☐ protrusion	☐ Place a cane-detectable barrier on each side at floor level.
Does the phone have push-button controls?	☐	☐	☐ Contact phone company to install push-buttons.
Is the phone hearing-aid compatible?	☐	☐	☐ Have phone replaced with a hearing-aid compatible one.
Is the phone adapted with volume control?	☐	☐	☐ Have volume control added.
Is the phone with volume control identified with appropriate signage?	☐	☐	☐ Add signage.
If there are four or more public phones in the building, is one of the phones equipped with a text telephone (TT or TDD)?	☐	☐	☐ Install a text telephone. ☐ Have a portable TT available. ☐ Provide a shelf and outlet next to phone.
Is the location of the text telephone identified by accessible signage bearing the International TDD Symbol?	☐	☐	☐ Add signage.

Appendix C: Interview Data

The following is a histogram of counts for each category of space perception - how each department felt about the amount of space it had for storage. Though the bins/ranges listed below contain mixed numbers (for instance, bin #1 ranges from 2.5 to 3.5,) the data only contains the integers 3-5. The bins were spaced this way to properly render the integers along the x axis, which is a quirk of the software (it displays the middle of each bin). The two modes, option 3 and option 5, are clearly visible, towering over option 4.

Histogram	Bin Min	Bin Max	Bin Midpoint	Freq.	Rel. Freq.	Prb. Density
Bin #1	2.5000	3.5000	3.0000	5	0.4545	0.45
Bin #2	3.5000	4.5000	4.0000	2	0.1818	0.18
Bin #3	4.5000	5.5000	5.0000	4	0.3636	0.36



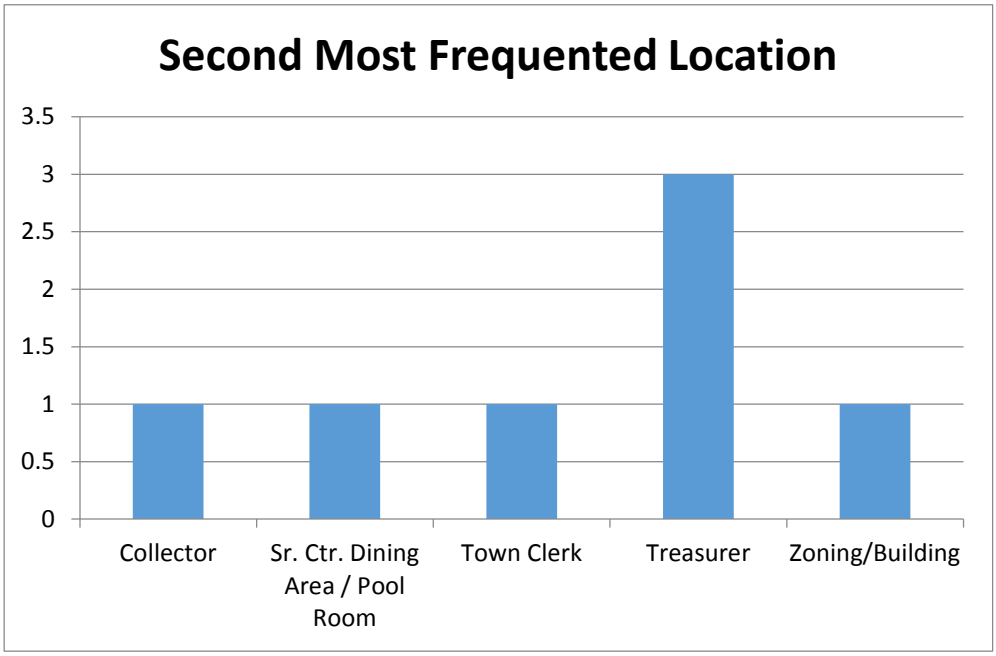
Greatest Needs	Count of Greatest Needs
Eyesore Reduction	1
Paper storage	7
Paper Storage, Meeting Area, Privacy, Storage Conditions	1
Paper storage, Seasonal storage, Medical storage	1
Grand Total	**10**

Time at Desk	Count of Time at Desk
Seasonal	1
Variable	1
Half the time	1
Most of Day	6
Whole Day	2

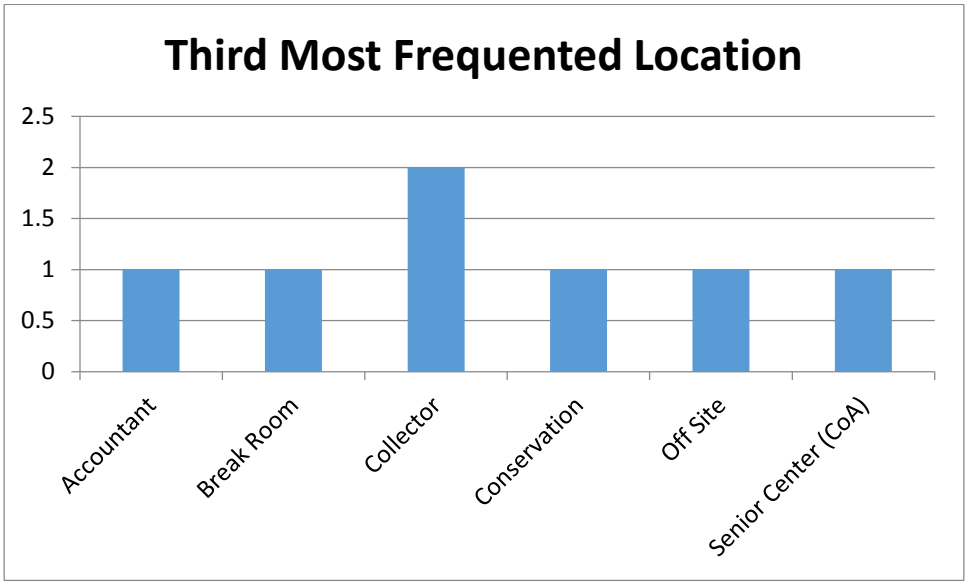
Time Away	Count of Time Away
Almost Never	1
Rarely	4
Daily, short periods	2
Periodically	1
Regularly	2
Seasonal	1

Location	Count of Frequent: #1
Accountant	1
Assessor	1
Restroom	4
Selectmen's Office (Town Admin.)	2
Sr. Ctr. Dining Area / Pool Room	1
Zoning/Building	1
Grand Total	**10**

Location	Count of Frequent: #2
Collector	1
Sr. Ctr. Dining Area / Pool Room	1
Town Clerk	1
Treasurer	3
Zoning/Building	1
Grand Total	**7**



Location	Count of Frequent: #3
Accountant	1
Break Room	1
Collector	2
Conservation	1
Off Site	1
Senior Center (CoA)	1
Grand Total	**7**



Location	Count of Frequent Stacked
Accountant	2
Assessor	1
Break Room	1
Collector	3
Conservation	1
Off Site	1
Restroom	4
Selectmen's Office (Town Admin.)	2
Senior Center (CoA)	1
Sr. Ctr. Dining Area / Pool Room	2
Town Clerk	1
Treasurer	3

Zoning/Building	2
Grand Total	**24**

Dept. ID	Number of Employees	Other Members	Total People in Department
1	3	3	6
2	2	0	2
3	6	0	6
4	2	0	2
5	3	0	3
6	2	5	7
7	2	0	2
8	1	33	34
9	2	2	4
10	1	0	1
11	4	0	4

Dept. ID	Greatest Needs	Perception of Space
1	Paper Storage, Meeting Area, Privacy, Storage Conditions	5
2	Eyesore Reduction	3
3	Paper storage	3
4	Paper storage	3
5	Paper storage	3
6	Paper storage	3
7	Paper storage	5
8	Paper storage	5
9		4
10	Paper storage	4
11	Paper storage, Seasonal storage, Medical storage	5

Dept. ID	Time at Desk	Time Away	Frequent: #1
1	Seasonal	Seasonal	Restroom
2	Most of Day	Periodically	Assessor
3	Most of Day	Rarely	Restroom
4	Most of Day	Rarely	Restroom
5	Most of Day	Rarely	Accountant
6	Variable	Regularly	Zoning/Building
7	Whole Day	Almost Never	Restroom
8	Half the time	Regularly	Selectmen's Office (Town Admin.)
9	Whole Day	Rarely	
10	Most of Day	Daily, short periods	Selectmen's Office (Town Admin.)
11	Most of Day	Daily, short periods	Sr. Ctr. Dining Area / Pool Room

Dept. ID	Frequent: #2	Frequent: #3
1	Collector	Off Site
2	Treasurer	Accountant
3		
4		
5	Treasurer	Collector
6	Town Clerk	Conservation
7		
8	Zoning/Building	Senior Center (CoA)
9		
10	Treasurer	Collector
11	Pool Room / Sr. Ctr Dining Area	Break Room

Dept. ID	Layout Change
1	Security, Stairs, Conference Room, CHIP-IN
2	None
3	Elevator
4	None
5	None
6	Men's Room Location
7	Replace Door, Storage next door
8	Getting into building, ADA non-compliance, CHIP-IN
9	Accessibility
10	None
11	Bathrooms far, Kitchen small, Receptionist

Dept. ID	Impediment
1	Boxes/Clutter in Own Office
2	None
3	None
4	None
5	None
6	None
7	Climbing over boxes
8	Furniture makes hall narrow
9	
10	Archive Room - storage is high
11	Boxes/Clutter in Own Office

Appendix D: The 2007 ADA Plan Excerpt

Public Buildings: George C. McKinstry III Municipal Building

Name: George C. McKinstry III Municipal Building **Location:** 37 Main Street

Function: Municipal building, senior center, CHIP-IN Site. **Responsible Party:** Board of Selectmen

General Description or Obstacle Which Limits Mobility or Access: The McKinstry Building serves as multi-purpose municipal office building housing a number of town offices, senior center and CHIP-IN (food distribution). Generally, the building is moderately accessible, with a number of required modifications for full accessibility compliance. The more obvious need is the provision of internal; vertical access between the lower and main floor levels. Currently, each level can only be reached independently through separate access/egress doors or using interior stairs. No internal lift or elevator exists. The existing accessible parking is non-compliant as is the intended "accessible routes of travel". In fact the paved walkways are extremely unsafe due to the location of catch basins with large grates and abrupt elevation drops as well as excessive cross-slopes. The gazebo on the common in front of the McKinstry Building is wholly non-compliant. Most of the rooms and facilities on the lower level require basic modifications such as door hardware, accessible signage, compliant coat racks and corrective action on "ramps". In addition, both bathrooms require modifications for full compliance. Most of the interior stairways require changes to existing railings. Similarly, on the main floor level, most offices require the removal or raising of existing signage as they currently protrude into the accessible route of travel. In addition, non-compliant door hardware, counters and lack of brailled signage is a common occurrence. The Historic Commission Office is located on a third level which can only be accessed via stairs. As this is a public board providing public services, discontinuance at that location or relocation is recommended. Both men's and women's accessible bathrooms require modifications for full compliance. The men's and women's employee bathrooms are non-compliant but are not open to the public. It may be necessary to bring these into full compliance at a later time as a "reasonable accommodation".

Description of Programs: Administrative offices of general town government, senior center, CHIP-IN.

Accessibility Compliance Options: Initiate improvements and remove architectural barriers as specified.

Estimated Total Project Cost: Up to $281,800+

Projected Completion Date: November 2010

General Description of Obstacle Which Limits Mobility or Access	ADAAG Compliance	MA 521 CMR Compliance	Type of Action to be Taken	P	F	Cost Estimate
McKinstry Building - Exterior						
1. *The gazebo is wholly noncompliant as there exists no accessible route of travel to the structure due to a 7" abrupt change from ground level to the gazebo*	*S. 4 3*	*S.20*	*Construct a roughly 40' long, 48" wide w/36" clear width paved accessible pathway to provide access to the bandstand. The running slope of the walkway cannot exceed 5.0% and the cross slope cannot exceed 2.0%..*	*1*	*3*	*$500*
2. *Non-compliant front parking due to lack of van accessible parking and, signage mounted too low and non-compliant access aisle..*	*S. 4 6*	*S. 23*	*Designate one 8' wide (minimum) parking space w/ 8' wide van accessible access aisle Provide related striping and van accessible signage. (Note: Only one van accessible space required, but a second compliant accessible passenger vehicle space is also recommended)*	*1*	*2*	*$150*

McKinstry Building - Exterior continued							
3	"Collector's drop box" is not accessible as the 60" a.f.f. height exceeds the maximum reach range requirements	S. 4 2	S.6	Lower "drop box" so that the opening is no more than 54" a.f.f. and within acceptable reach range for all users.	4	2	$150
4	The accessible route in front of the building is severely compromised, unsafe and non-compliant due to excessive cross slopes (up to 6 0%), abrupt changes in level surface of 2" due to two catch basins within the accessible route of travel. Both storm drains have openings of up to 1¼" (½" allowed). .	S. 4.3. S. 4 5	S. 20 S. 22	Reclaim entire front walkway and sidewalk area and reconstruct such that running slopes shall be no more than 5.0% and cross slopes no more than 2.0%. Replace existing catch basins such that openings are no greater than ½". Gratings or openings should run perpendicular to the accessible route of travel.	1	4	$8,500
5	The main front entrance stairs and doorway are wholly noncompliant. Railings do not exist on both sides of stairs nor do the railings extend 12" beyond the top and bottom of the stairs. The doors are only 30" wide with a 28" clearance (32" minimum required), with a closing speed of less than 6 seconds. The stairs are in a deteriorated and unstable condition and need repair.	S. 4 3 S. 4 9 S. 4.13	S. 20 S. 26 S. 27	Replace front entrance railings to meet required height and diameter requirements including 12" extension beyond the base of the stairs. Patch and repair cement stairs. Replace existing doorway with one 36" door w/compliant hardware and one 24" fixed panel. Adjust door closer to comply with maximum 6 seconds closing speed and 15 lbs. push/pull force requirement.	1	4	$7,500
6	The side front entrance doorway nearest the senior center is wholly noncompliant The doors are only 30" wide with a 28" clearance (32" minimum required), the door hardware is non-compliant and the closing speed is less than 4 seconds.	S. 4.3 S. 4 13	S. 20 S. 26	Replace existing doorway with one 36" door w/compliant hardware and one 24" fixed panel. Adjust door closer to comply with maximum 6 seconds closing speed and 15 lbs. push/pull force requirement.	1	4	$3,500
7	The accessible route (ramp) to the side front entrance is compromised due to a ¼" to1" differential in abrupt change in level surface from asphalt walkway to the ramp The height of the existing railings are at roughly 17" and 32½" a.f.f. which is lower than the allowed ranges.	S. 4.3 S 4.5 S. 4.8	S. 20 S. 22 S. 24	Patch and repair sidewalk to ramp to maintain a level surface such that there are no changes greater than ¼" in level surface. Modify existing handrails or replace if possible such that the handrails are continuous on both sides of the ramp. 1-1/4" to 1-1/2" in outside diameter, and round or oval in shape; handrails to be provided in pairs, one at a height of 34" - 38" above the ramp surface and the lower handrail at a height between 18" and 20"; handrails to be 1-1/2" from the mounted surface; handrails should extend 12" beyond the bottom of the ramp.	1	3	$7,500
8	The side front entrance accessible doorway at the ramp has a door closing speed of less than 5 seconds.	S 4.13	S. 26	Adjust door closer to comply with maximum 6 seconds closing speed requirement.	1	2	$0
9.	A window air conditioning unit at the stairs next to the ramp protrudes approximately 10" into the accessible route of travel which exceeds the maximum allowed 4"	S. 4.4	S 20	Relocate air conditioner to a location that is not within the accessible route of travel or construct wing walls to stair surface.	2	2	$0 - $50

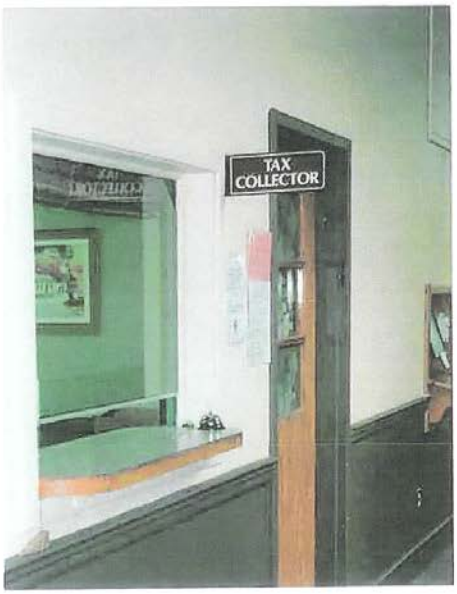
McKinstry Building - Exterior continued						
10. Non-compliant side parking for senior center due to lack of van accessible parking, signage mounted too low, lack of striping and no designated access aisles.	S. 4.6	S. 23	Designate one 8' wide (minimum) parking space w/ 8' wide van accessible access aisle. Provide related striping and van accessible signage. (Note: Only one van accessible space required, but a second compliant accessible passenger vehicle space is also recommended).	1	2	$150
11 The senior center entrance has a door closing speed of less than 5 seconds	S. 4.13	S. 26	Adjust door closer to comply with maximum 6 seconds closing speed requirement.	1	2	$0
12 The side senior center sign is between 27" and 80" a.f.f. and protrudes more than 4" into the accessible route of travel.	S. 4.4	S. 20	Raise sign such that the bottom of the sign is more than 80" a.f.f.	4	2	$0
McKinstry Building – Senior Center						
1 Interior door hardware to roughly 4 rooms are knob-style and non-compliant. Hardware should be easily operable by one hand or a "closed fist".	S. 4.13	S. 26	Replace door hardware with lever-type hardware or other accessible compliant hardware.	2	2	$300
2 Lack of interior accessible signage (5) to all rooms within the senior center area.	S. 4.30	S. 41	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Raised and Brailled characters should also be included. Signage should be mounted at 60" a.f.f. o.c. adjacent to the latch side of the door(s).	2	1	$250
3 Interior door hardware to storage cabinets and kitchen cabinets are non-compliant. Hardware should be easily operable by one hand or a "closed fist"	S. 4.13	S. 26	Replace door hardware with lever-type hardware or other accessible compliant hardware.	2	2	$500
4. Food service counter height is 36½" a.f.f. which exceeds the maximum height requirement by 2½".	S. 7	S. 7	Construct counter below the main counter with a maximum height of 34" with a minimum of 27" knee clearance and 36" long.	2	3	$350
5. Three coat racks are all in excess of 62" a.f.f. which exceeds the maximum 54" a.f.f. for a side approach	S. 4.2	S. 34	Install 1 or 2 coat hooks at each coat rack location with a maximum height of 54" a.f.f.	4	2	$75
6. The accessible route (ramp) from the senior center community room to the offices and remainder of the lower building level is non-compliant because the existing railings are not paired on both sides and do not extend 12" beyond the ramp base.	S. 4.8	S. 24	Modify existing handrails or replace if possible such that the handrails are continuous on both sides of the ramp, 1-1/4" to 1-1/2" in outside diameter, and round or oval in shape; handrails to be provided in pairs, one at a height of 34" - 38" above the ramp surface and the lower handrail at a height between 18" and 20"; handrails to be 1-1/2" from the mounted surface; handrails should extend 12" beyond the bottom of the ramp.	1	3	$1,250+

McKinstry Building – Senior Center continued							
7	Outreach Coordinator Office – noncompliant entry due to a ¼" abrupt change in level surface and 2 short "ramps" 2 3% and 17 5% slope, lack of compliant signage Senior Center Director Office - noncompliant entry due to a ¼" abrupt change in level surface and; lack of compliant signage	S. 4 3 S. 4 8 S. 30	S. 20 S. 24 S. 41	Investigate the feasibility of constructing an interior platform ramp to provide compliant access to both offices. Install accessible compliant signage with appropriate finish and contrast and character height and proportions (specifications noted above)	2	3	Up to $8,500+
8	Senior Center Computer - lack of compliant signage; lack of compliant door hardware; insufficient knee clearance beneath computer tables.	S. 4 13 S. 4 30 S. 4.32	S. 26 S. 41 S. 35	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Replace door hardware with lever-type hardware or other accessible compliant hardware. Modify one existing table to comply with required 27" knee clearance requirement.	4	2	$175
McKinstry Building – Remainder of Lower Building Level							
1	Employee Break Room - lack of compliant signage, lack of compliant door hardware; noncompliant entry due to a 3½" abrupt change in level surface.	S. 4 13 S. 4 30 S. 4.3	S. 26 S. 41 S. 20	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Replace door hardware with lever-type hardware or other accessible compliant hardware. Reasonable accommodations as may be required to address non-compliant entrance.	4	2	$125
2	Haz Mat/Con Com Room - lack of compliant signage, lack of compliant door hardware, noncompliant floor surface at door entry due to unstable/unsecure floor mat	S. 4 13 S. 4 30 S. 4 5	S. 26 S. 41 S. 29	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Replace door hardware with lever-type hardware or other accessible compliant hardware. Secure mat to floor surface.	4	2	$125
3	CHIP-IN Room - lack of compliant signage; lack of compliant door hardware; clearance of less than 30 (32" minimum required) at door entry	S. 4 13 S. 4.30 S. 4 3	S. 26 S. 41 S. 20	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Replace door hardware with lever-type hardware or other accessible compliant hardware. Modify entrance by creating larger entry and installing a compliant (34" - 36") door	2	3	$1,250
4	Interior stairs and stairwells- 3 interior stair wells and one lower level set of stairs have non-compliant railings, non-slip resistant stair treads and in one circumstance a protrusion into the accessible route due to the lack of head room within the stairwell	S. 4 3 S. 4 4 S. 9	S. 20 S. 27	Replace railings to meet required height and diameter requirements including 12" extension beyond the base of the stairs if feasible and not a hazard. Apply a slip resistant finish to all stair treads, modify, as feasible, the interior stair well to provide additional 8" of clearance at landing.	2	4	Up to $12,500+

McKinstry Building – Remainder of Lower Building Level continued						
5. Lower level women's bathroom – mirror is mounted too high at 44" a.f.f.; sink not wrapped below; towel dispenser too high at 56½" a.f.f.; lack of compliant signage; lack of coat hook; flush valve of water closet on wall side; rear grab is 24" long (42" minimum required); push/pull force of cold water sink lever exceeds maximum threshold of 5 lbs; toilet paper dispenser is located over the grab bar.	S. 4.16 S. 4.17 S. 4.19 S. 4.22 S. 4.24 S. 4.26 S. 4.27 S.4.30	S.30 S.41	Modify existing bathroom to comply with the following: signage – install accessible compliant signage with appropriate finish and contrast and character height and proportions, raised and brailled characters should also be included, signage should be mounted at 60" a.f.f.; sink - all pipes below sink must be wrapped, adjust sink level; dispensers - towel dispensers, drying devices and similar devices must be operable with one hand or a closed fist at a maximum height of 42" a.f.f.; toilet paper dispenser shall be at a minimum 24" a.f.f and within 36" of the rear wall and cannot be located over the grab bars; toilet - flush valve is to be on the approach side of the toilet; grab bars - 2 grabs 42" long, one located at the back wall and one located on the side wall (due to lack of wall space behind water closet, a variance request would be in order); general - bottom of mirror shall be at a maximum of 40" a.f.f.; coat hook shall be mounted at a height no greater than 54" a.f.f.	3	3	$400
6. Lower level men's bathroom – urinal too high at 20" a.f.f.; lack of compliant signage; lack of coat hook; stall door not self-closing; no coat hook; water closet is 16½" o.c. from nearest sidewall; wastepaper basket located under towel dispenser creating an obstruction..	S. 4.17 S. 4.18 S. 4.22 S. 4.24 S. 4.26 S.4.30	S.30 S.41	Modify existing bathroom to comply with the following: signage – install accessible compliant signage with appropriate finish and contrast and character height and proportions, raised and brailled characters should also be included, signage should be mounted at 60" a.f.f.; toilet - the centerline of the toilet shall be 18" from the nearest side wall and at least 42" from the farthest side wall; urinal - accessible urinals shall be stall-type or wall-hung with an elongated rim at a maximum height of 17" a.f.f.; flush valve on the approach side at a maximum height of 44" a.f.f.; general - coat hook shall be mounted at a height no greater than 54" a.f.f. door stall shall be self-closing; relocate waste basket.	3	3	Up to$900+
McKinstry Building – Main Level						
1. Lack of internal vertical accessible route of travel between main and lower level of building.	S. 4.3 S. 4.10 S. 4.11	S. 20 S. 28	Install either an internal limited use limited access (LULA) or a full service (3-4 stop) elevator.	2	4	$120.000 - $185,000+
2. Lack of interior accessible signage to all 15 offices on the main floor level..	S. 4.30	S. 41	Install accessible compliant signage with appropriate finish and contrast and character height and proportions. Raised and Brailled characters should also be included. Signage should be mounted at 60" a.f.f. o.c. adjacent to the latch side of the door(s).	2	1	$950
3. Ten offices have wall mounted signage with a leading edge between 27" and 80" and a protrusion more than the 4" max into the accessible route.	S. 4.4	S. 20	Raise signage such that the bottom of the signs are more than 80" a.f.f.	2	2	$100
4. The counter heights at both the collector's office and the assessor's office are constructed at 45" and 43½" a.f.f., respectively which exceeds the maximum height requirement of 36" a.f.f.	S. 7	S. 7	Provide a minimum 36" wide counter with a maximum height of 36" at each office.	2	3	$900

McKinstry Building – Main Level continued

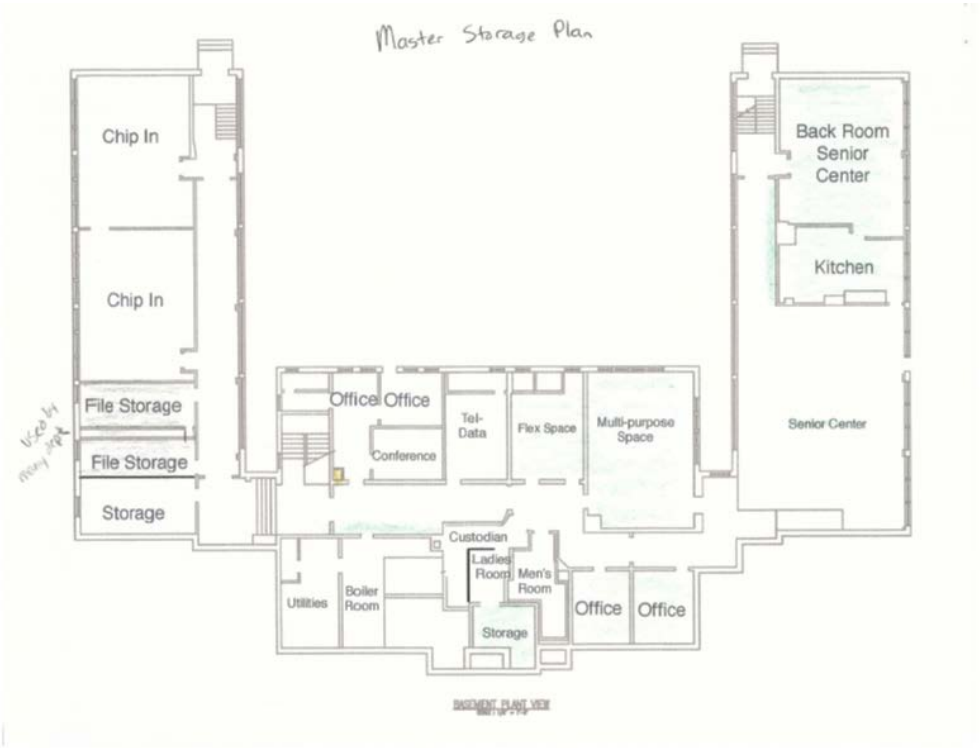
5	The counter heights at both the collector's office and the assessor's office are constructed at 45" and 43½" a.f.f., respectively which exceeds the maximum height requirement of 36" a.f.f.	S. 7	S. 7	Provide a minimum 36" wide counter with a maximum height of 36" at each office.	2	3	$900
6	The tables used as public work space in the hallway outside the assessor's office provides only 23" of knee clearance.	S. 4 32	S. 35	Modify existing tables to comply with required 27" knee clearance requirement.	4	3	$150
7	A wall mounted keyboard shelf for electronic assessor's records access (approximately 38" a.f.f.) has a leading edge between 27" and 80" and protrudes 8" ore than the maximum allowed 4" into the accessible route of travel	S 4 4	S 20	Construct wing walls to floor surface	4	3	$250
8	Drinking fountain in hallway is 40" a.f.f. at spout. Existing fountain does not provide sufficient minimum 27" knee clearance No companion "high" drinking fountain provided.	S. 4.15	S. 36	Install new high/low accessible compliant drinking fountain with maximum spout height of 36" a.f.f. for low and 43" a.f.f. for high fountain. Construct wing or flange wall on side(s) of drinking fountain if necessary o minimize protrusion to a maximum of 4. Water fountain could also be removed in its entirety.	4	3	$0 - $4.150
9	Lack of internal vertical accessible route of travel between main level of building and historic commission office on upper level.	S. 4 3 S. 4 10 S. 4.11	S. 20 S. 28	Either discontinue use of this office or install a chairlift.	2	4	$35,000+

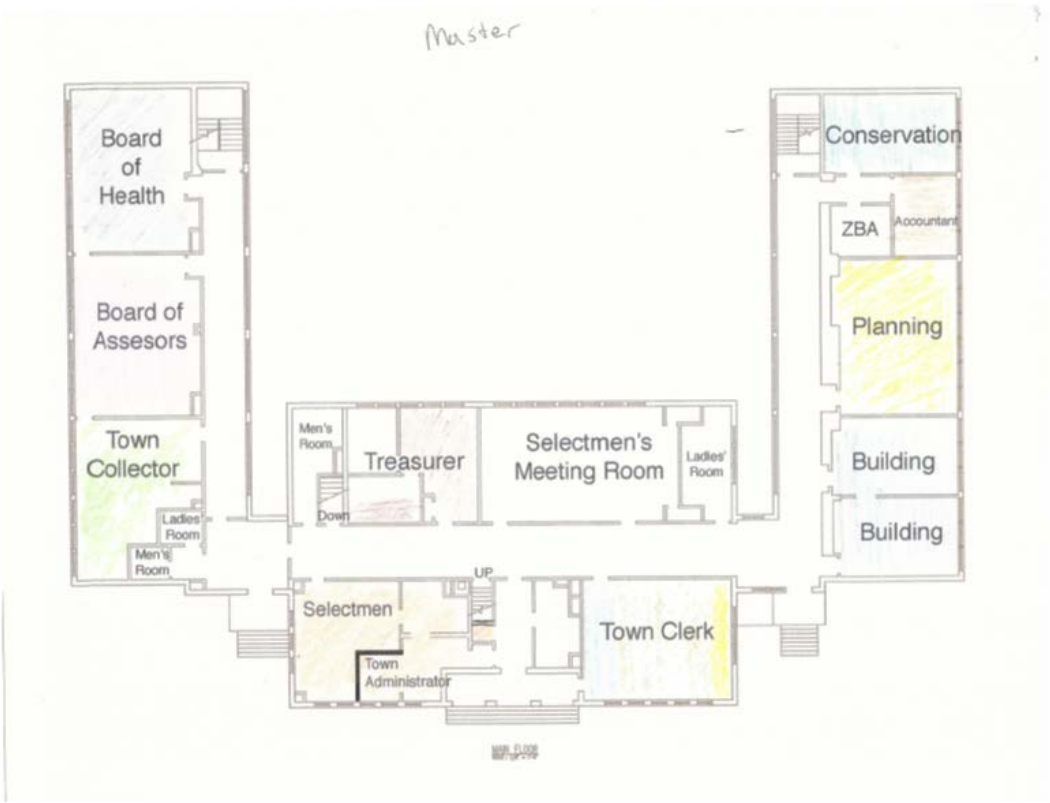


McKinstry Building – Main Level - continued

10.	*Men's public bathroom – existing sign protrudes into accessible route of travel; lack of accessible signage; abrupt change and excessive slope at threshold entry to bathroom; mirror exceeds maximum height requirement by 2"; stall door not self-closing; coat hook at 68½" a.f.f. which exceeds height requirement by 14½", inadequate clearance and maneuverability in front of water closet*	*S. 4.3 S. 4.22 S. 4.19 S. 4.30*	*S. 20 S. 30 S. 41*	*Reconfigure men's bathroom to insure full compliance with accessibility requirements This may require reconfiguring water closet stall and/or relocation of water closet. Maneuverability standards must be closely considered in such alteration* *In order to create an accessible bathroom, the existing areas of non-compliance must be addressed as follows: signage – remove or raise existing signage so that the sign bottom is at least 80" a.f.f.; install accessible compliant signage with appropriate finish and contrast and character height and proportions, raised and brailled characters should also be included, signage should be mounted at 60" a.f.ff., mirror – lower mirror such that mirror bottom is no more than 40" a.f.f., toilet - at least 42" of clearance required in front of toilet; entrance – replace or modify existing threshold to eliminate excessive slope and abrupt change in level surface; general – lower coat hook to a maximum of 54" a.f.f., stall door to be self-closing.*	*3*	*4*	*Up to $6,500*
11	*Women's public bathroom – existing sign protrudes into accessible route of travel; lack of accessible signage; mirror exceeds maximum height requirement by 1"; stall door not self-closing; coat hook at 63" a.f.f. which exceeds height requirement by 9"*	*S. 4.22 S. 4.19 S. 4.30*	*S. 30 S. 41*	*Reconfigure women's bathroom to insure full compliance with accessibility requirements.* *In order to create an accessible bathroom, the existing areas of non-compliance must be addressed as follows: signage – remove or raise existing signage so that the sign bottom is at least 80" a.f.f.; install accessible compliant signage with appropriate finish and contrast and character height and proportions, raised and brailled characters should also be included, signage should be mounted at 60" a.f.ff., mirror – lower mirror such that mirror bottom is no more than 40" a.f.f., general – lower coat hook to a maximum of 54" a.f.f.; stall door to be self-closing.*	*3*	*2*	*$150*

Appendix E: The Master Storage Floor Plan





Appendix F: Preliminary Recommendations

The Building Overall

Per the building plan, throughout the building, accessible signage will be added. All public counters and work surfaces, including computer stations, will be made accessible. Each floor will have an accessible water fountain. The stairwell next to the VA office will be removed, and stairs will be put in next to the elevator shaft. The VA office and adjacent conference area will be merged into one room. In all bathrooms, the mirrors, grab bars, and toilets will be lowered to accessible levels {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}.

Additionally, per word from a selectman, there has been a new development on the main floor. The Historical Commission, which has a location outside Town Hall, will be relocating its office to there. This opens up a new room in the building, be it for storage or any of many possibilities to be considered in this chapter.

Hallways

Option 1: Add a bell to the entrances over the door of the building so that it is known when someone exits or enters.

Option 2: After public hours, lock all doors. This may require a lot of keys to be made for town employees, which could also pose a security threat if lost.

Option 3: After public hours, lock all doors. Install a system where citizens may ring a bell to be buzzed into the building. The potential issue with a buzzer is that someone needs to be responsible for answering it.

Option 4: After public hours, lock all doors except for the door at the accessible entrance. Install a camera at the only unlocked entrance to monitor who comes and goes into the building after hours.

Restrooms

Option 1: Make every restroom accessible.

Option 2: Post signs at inaccessible restrooms with directions to accessible ones.

Offices

Option 1: Relocate boxes that sprawl into office aisles into a new storage area. Possible locations include:

Option 1A: the attic,

Option 1B: the Historical Commission's old office,

Option 1C: the VA office,

Option 1D: the Cemetery Department's office were the Cemetery Department to relocate to the highway barn, or

Option 1E: one of the rooms that CHIP-IN occupies were CHIP-IN to relocate.

Option 2: Rearrange the layout of offices so that furniture is not in the way. The final test could be to walk around, holding a yardstick horizontally; if the yardstick bumps into any furniture, it needs to be moved so that there is 36" clearance for wheelchairs.

The Lower Floor

Senior Center Main Room

Per the building plans that the team acquired, an accessible coat rack will be added to the senior center. Also, the senior center entrance is being moved to the bottom of the ramp. The existing senior center ramp will be replaced with a new ramp, and stairs will be added next to it. The new ramp will have proper railings {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. Options to remedy other concerns are as follows:

Option 1: Install shelves on the wall suitable for holding books.

Option 2: When compliant coat racks are added, shorten how wide the racks are. If the coat racks are not utilized to their full capacity, that area may be able to hold a bookshelf.

Option 3: Do both of the above options to some degree.

Option 4: Relocate the Veteran's Wall to a long enough stretch of wall that can hold it all, possibly:

Option 4A: the hallway by CHIP-IN, or

Option 4B: opposite the coat racks.

Option 5: The Veteran's Wall takes up a significant amount of wall space as a block, but could be broken down into smaller chunks. One possibility is to run a single row of the pictures around the room. Another possibility would be to scatter the wall into perhaps five or so even chunks to be distributed around the cafeteria where space is available.

Option 6: Shift the piano over so that it is wedged next to the new set of stairs in a position similar to its current one, if the location is feasible after changes to the interior are done.

Option 7: Relocate either the bulletin board or the television so that the two are not right next to each other. Ensure there is a clear space in front of the bulletin board so that citizens can peruse it at their leisure.

Option 8: Relocate the bulletin board to where the Veteran's Wall currently is.

Option 9: Supply additional pamphlet holders for the walls, likely to be placed near the offices of the director and outreach coordinator.

Senior Center Kitchen

Option 1: Replace the cabinet knobs with more accessible hardware that can be operated by someone with limited use of his/her hands.

Option 2: Replace the cabinets with ones that can both hold more storage and be accessed by someone with limited use of his/her hands. If new cabinets can be installed that are able to hold more items, the spillover of foodstuff to the room behind the kitchen can be reduced.

Option 3: Add a modular wall to the cafeteria so that the kitchen area can be partitioned off during events. This will help control noise, as well as offer two separate spaces if there were to be two smaller events held at the same time.

Senior Center Multi-Purpose Room

Per the building plans, the floors will be removed in the basement offices and break room, to be replaced with new flooring that is level with the hallway {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. This removes the step up into both the multipurpose room and Outreach Coordinator's Office.

Option 1: Remove the board that covers the pool table. A pool table does not require knee clearance by ADA standards, but a table does.

Option 2: Elevate the legs of the pool table. The table can be no higher than 34" tall and must have knee space that is 27" high, 30" wide, and 19" deep. The storage under the table will also need to be moved to provide for the depth. Seasonal decorations in the room can be moved to the unfinished side of the attic.

Option 3: Only use the table for standing access; do not put any chairs around it.

Option 4: Store the folding tables in the room behind the kitchen, and move seasonal items from that room into the attic to make more room.

Option 5: Leave the tables where they are and address any problems with moving them as they arise.

The Employee Break Room

Option 1: Give the existing break room to the Council on Aging and create a new employee break room elsewhere in the building, such as in the area that the Historical Commission is vacating, or in the room where the VA office currently is.

Option 2: Offer the Council on Aging alternative space nearby, such as in the room where the cemetery commission currently is, and reclaim the employee break room.

The Archive Room:

Option 1: Per Charlton's bylaws, there is no need for humidity control, and each department is in charge of its own storage. The Board of Selectmen are not responsible for the

conditions in which each department stores its archive files, but it might still be worthwhile to install a dehumidifier in the room for employees' peace of mind and protection for the documents.

Option 2: Leave a small stepladder in the archive room to aid employees in reaching the higher shelves.

Option 3: The attic is being severely underutilized; there is a lot of space up there that can be used for storage. There is both a finished section and an unfinished section. The finished section may be suitable for additional file storage, especially since the stairway that leads to the attic locks. The unfinished section may be suitable for storage of lighter items.

CHIP-IN

Per the building plans, a ramp will also be added near CHIP-IN, making that wing of the bottom floor accessible from inside the building {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. Options with this in mind follow:

Option 1: Relocate CHIP-IN to another non-profit, perhaps a church or some place that is accustomed to storing food.

Option 2: Add a ramp outside the building by CHIP-IN to make that entrance also ADA accessible. Guide traffic in such a way (and leave signs with arrows to direct the flow) that citizens do not double-back to exit from where they entered. Ensure there is enough space that the crowd does not go up the interior stairs. Consider lining up recipients inside the long hallway by CHIP-IN and having them exit via the back entrance, if it has a ramp.

The Main Floor

The Town Collector and Assessor

Option 1: Use instant message software, such as Microsoft Lync, to communicate some information. This reduces the noise level so employees can better concentrate, and does not risk breaking confidentially should a member of the public at the window overhear sensitive information.

Option 2: If the problem is more of a problem of the area being too loud to concentrate, encourage headphones or install a white noise filter.

Option 3: If the problem is more of a problem of protecting confidential information, add a soundproof shutter to the window to the public. Even some cloth curtains may help to absorb sound, and offer aesthetic appeal. One of the sewing groups from the senior center could perhaps make and donate curtains that meet the specifications for the service windows.

The Collector

Option 1: If the main issue is that the storage is unpleasant to the eye, hide it; consider placing a tablecloth on the table that holds the postage machine.

Option 2: Acquire wall storage, such as pamphlet holders, allowing the forms to still be frequently accessed but in a neater manner.

Option 3: Combine both options above; if the boxes of papers under the postage machine are moved, something else can take that space for storage, and be hidden from the public eye.

The Hall by Zoning and the Planning Board

Option 1: Remove the workstation.

Option 2: Relocate the workstation to a wider space.

Option 3: Replace the desk with a smaller desk, and rotate the workstation 90 degrees so that when the chair is pulled out, it does not decrease the clearance in the hallway. This desk could potentially be moved into the senior center to be used as a reception desk.

Main Floor Restrooms

Option 1: There already are paper signs posted that designate the employee restrooms. When accessible signage is added to all offices in the building, ensure that the bathrooms also receive signs, and include directions to the public restrooms / accessible restrooms.

Option 2: At the ladies' room, post a sign with directions to the men's room, and vice versa, so that lost citizens can find their way without distracting town employees.

Outside the Building

Getting into the Building / Parking

Per the building plans, handicap parking will be added by the elevator {Durland - Van Voorhis Architects, 2010, Charlton Town Hall Accessibility Improvements}. The options below take this into account.

Option 1: Obtain the adjacent soccer field and convert it into more parking spaces.

Option 2: Post signs before inaccessible entrances that alert people that they are not accessible and offer directions to the accessible entrance.

Option 3: When the main entrance to the senior center is moved to the base of the ramp, do not move the mailbox next to it again. Do not place anything within 18" of the pull side of the door, next to the handle.

Option 4: Designate a larger parking space specifically for larger vehicles except for when the lot is full. This allows construction vehicles to park easier and could allow a shuttle to park, if there were to eventually be established a shuttle from, for instance, a nursing home to Town Hall.

Wish List Locations

Meeting Area

Option 1: Use the space that the Historical Commission is vacating as a designated meeting area.

Option 2: Replace the furniture in the Selectmen's Meeting Room with more portable furnishings. If the room can be more easily rearranged, it could serve more purposes, such as roundtable discussions.

Option 3: If CHIP-IN were not on the lower level, a meeting area could occupy one of those two rooms.

Additional Employee Input: A private meeting area with a computer in it would also be beneficial, so that town employees in meetings with residents can access files that they might need.

Option 4: Use the space that will be made by combining the VA Office and existing conference room as a new, larger conference room. Add a projector setup to the room.

Senior Center Reception

Option 1: Designate a location for a volunteer receptionist. Contact the local high school with this volunteering opportunity, particularly the school's chapter of National Honor Society (NHS). NHS, as well as many sports teams, requires a set number of volunteer hours; students could sign up to volunteer as a greeter for the senior center. Since this is not a full-time position, the students would not need much space; just a place to sit and perhaps a small desk to do homework at. Consider placing a landline at the desk.

Option 2: Play a prerecorded greeting / directions over a monitor placed near the entrance.

Option 3: Place a bell over the entrance so Deb and Elaine have an idea of how many people are coming and going.

Cable Studio

Option 1: Set the cable studio up in the office that the Historical Commission is vacating.

Option 2: Set the cable studio up in the office in the Highway Barn that was meant for the Cemetery Commission.

Option 3: If the Cemetery Commission were to relocate, set the cable studio up in the Cemetery Commission's old location.

Option 4: If CHIP-IN were not on the lower level, the cable studio could occupy one of those rooms.

Option 5: Set the cable studio up in the high school. This is how Auburn has its local cable studio set up, and this benefits the school as well. Students are offered a film course in which they can learn how to use the film equipment and help run programs.

Appendix G: The Presentation to the Municipal Building Committee

WPI

Charlton Town Hall Space Optimization IQP

Amber Facchini
Andrea Goldstein

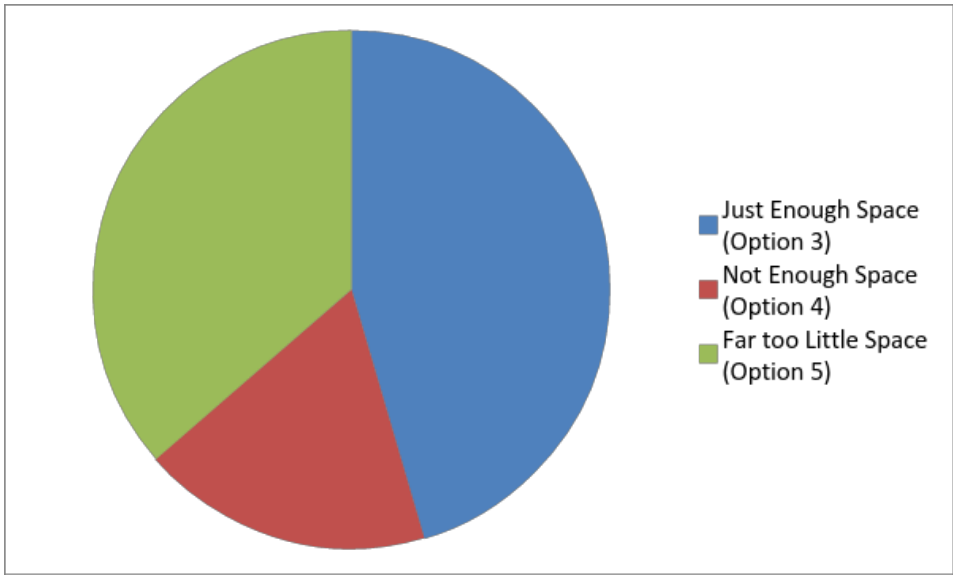
Presentation Overview

- Survey Results
- Greatest Need
- Locations We Focused On
  - Multiple Options
  - Our Recommendations
- Summary of Recommendations

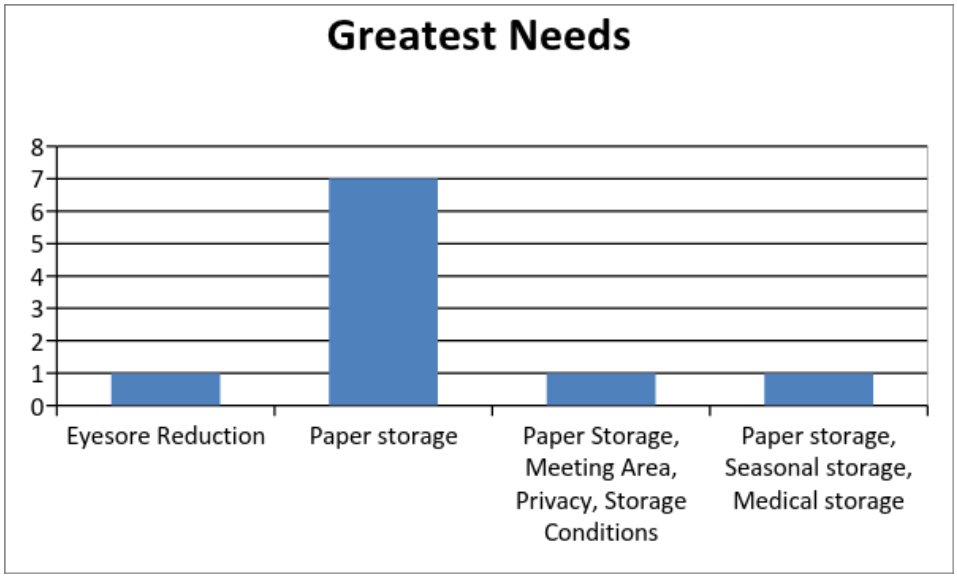
Our Methods

- Interviews
- ADA Checklist
- Data Analysis
- 3D Renders

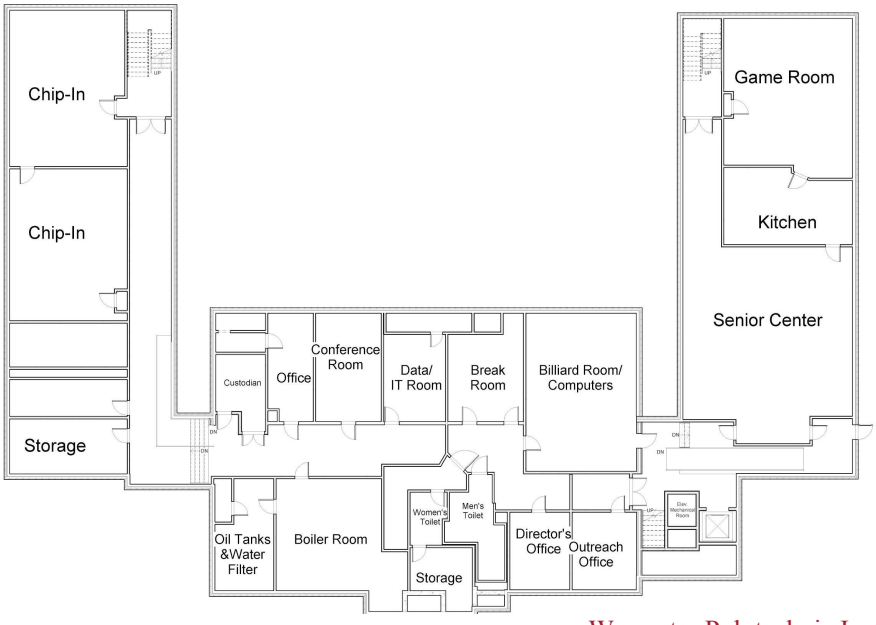
Opinions on Space



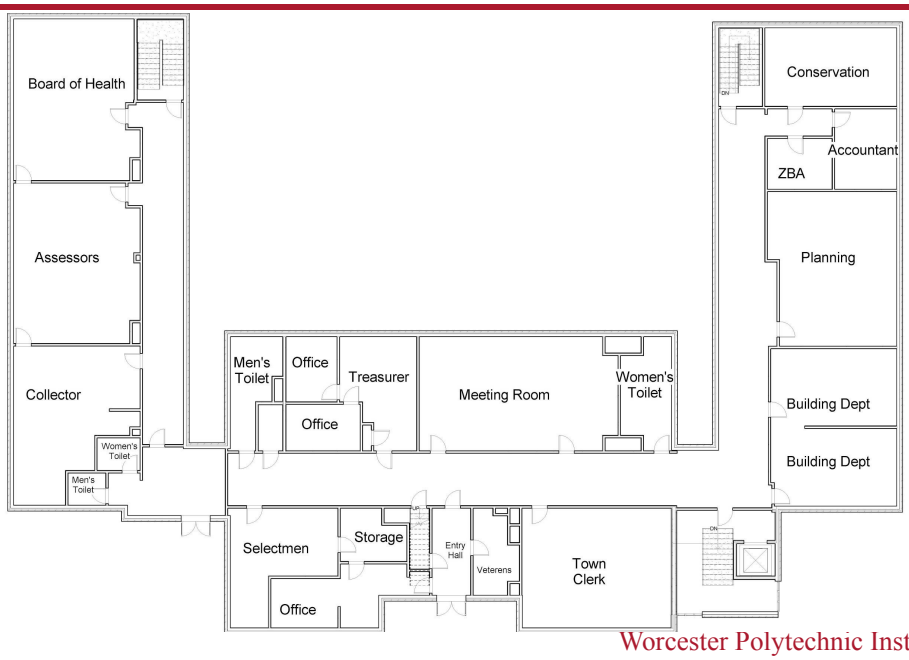
Greatest Storage Needs



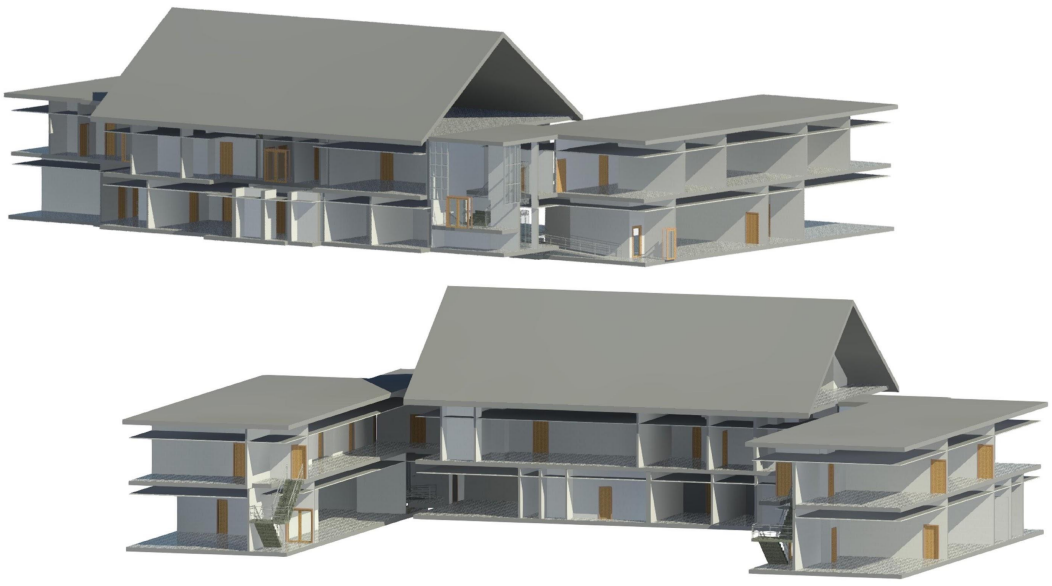
New Floor Plan for Basement



New Floor Plan for Main Floor



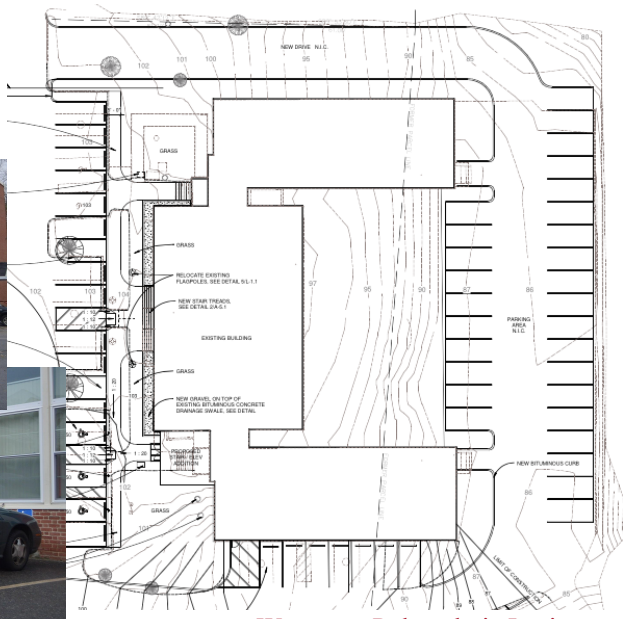
Views of New Building*



*Exterior walls excluded

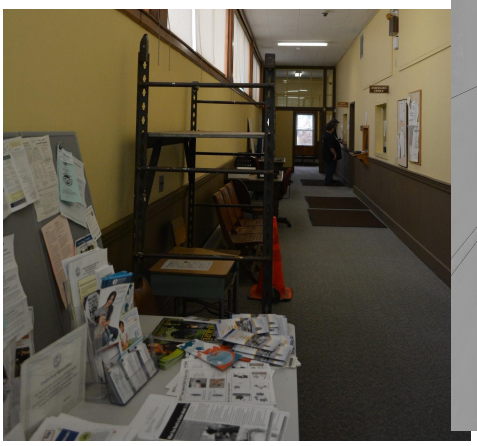
Building Access/Parking

- 4 Options
- Our Recommendations

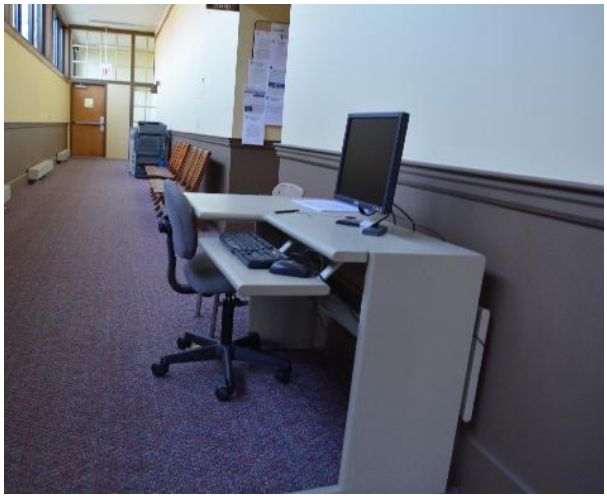


Hallways

- 4 Options
- Our Recommendations



Hallway by Zoning and Planning Board



- 3 Options
- Our Recommendations

Restrooms

- 2 Options
- Our Recommendations

Main Floor Restrooms

- 2 Options
- Our Recommendations

Feedback

Offices

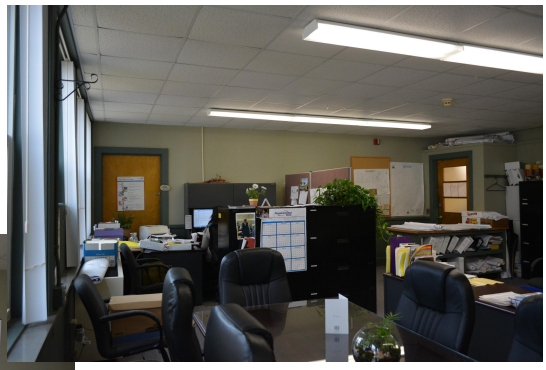
- 7 Options
- Our Recommendations

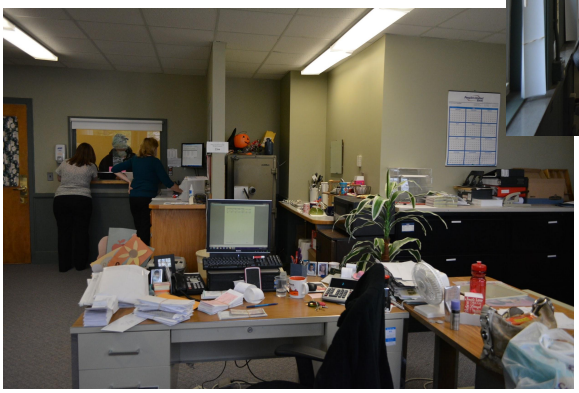
Archive Room

- 3 Options
- Our Recommendations

Town Collector and Assessors

- 3 Options
- Our Recommendations



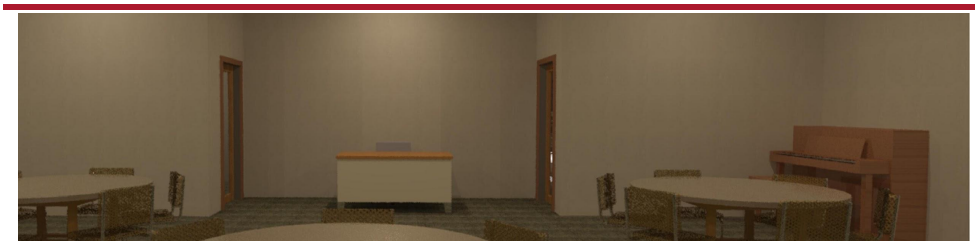


Town Collector

- 3 Options
- Our Recommendations

Feedback

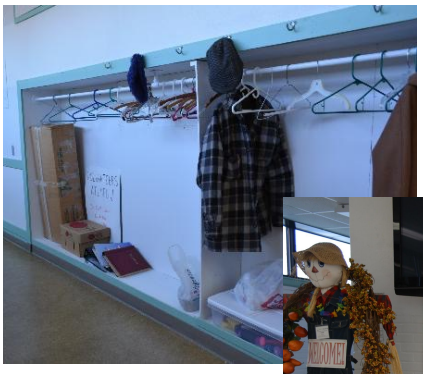
New Senior Center Renders



Senior Center Main Room

- 12 Options
- Our Recommendations

Senior Center Main Room Cont.



Senior Center Reception

- 3 Options
- Our Recommendations

Senior Center Kitchen

- 3 Options
- Our Recommendations

Senior Center Multi-Purpose Room

- 5 Options
- Our Recommendations

Employee Break Room

- 2 Options
- Our Recommendations

Feedback

Meeting Area

- 4 Options
- Our Recommendations

CHIP-IN

- 2 Options
- Our Recommendations

Cable Studio

- 5 Options
- Our Recommendations

Summary of our Recommendations

Amber Facchini
Andrea Goldstein

WPI Space Optimization IQP
For Draft Purposes Only
January 20, 2015

Survey Results (per 11 departments):
5/11 ==> Option 3: Just enough space
2/11 ==> Option 4: Not enough space
4/11 ==> Option 5: Far too little space

Greatest Need: Paper storage
*Our recommendations put solutions to paper storage above other options

**This handout is abbreviated; items that will be addressed, according to the building plan, have been omitted (ex. accessible signage to all offices, restroom improvements)

Building Access / Parking

There is not enough parking, there is no parking for oversized vehicles, and the gradient of the hill makes parking along the side of the building dangerous, even though the spots are handicap in name.

There are no signs before inaccessible entrances alerting people that they are not accessible.

There must be at least 18" of clear wall space on the pull side of a door, next to the handle. The mailbox next to the exterior senior center door violates this.

- Option 1: Obtain the adjacent soccer field and convert it into more parking spaces.
- **Option 2: Post signs before inaccessible entrances that alert people that they are not accessible and offer directions to the accessible entrance.**
- **Option 3: When the main entrance to the senior center is moved to the base of the ramp, do not move the mailbox next to it again. Do not place anything within 18" of the pull side of the door, next to the handle.**
- **Option 4: Designate a larger parking space specifically for larger vehicles except for when the lot is full. This allows construction vehicles to park easier and could allow a shuttle to park, if there were to eventually be established a shuttle from, for instance, a nursing home to Town Hall.**

Hallways

After public hours, there are often people wandering the halls still. With all of the paperwork stored in the building, this could potentially pose a security threat.

- **Option 1: Add a bell to the entrances over the door of the building so that it is known when someone exits or enters.**
- Option 2: After public hours, lock all doors. This may require a lot of keys to be made for town employees, which could also pose a security threat if lost.
- Option 3: After public hours, lock all doors. Install a system where citizens may ring a bell to be buzzed into the building. The potential issue with a buzzer is that someone needs to be responsible for answering it.
- Option 4: After public hours, lock all doors except for the door at the accessible entrance. Install a camera at the only unlocked entrance to monitor who comes and goes into the building after hours.

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Amber Facchini
Andrea Goldstein

The Hall by Zoning and the Planning Board

There is a desk in the hallway that, when the chair is not pushed in, frequently causes an obstruction.

- Option 1: Remove the workstation.
- Option 2: Relocate the workstation to a wider space.
- **Option 3: Replace the desk with a smaller desk, and rotate the workstation 90 degrees so that when the chair is pulled out, it does not decrease the clearance in the hallway. This desk could potentially be moved into the senior center to be used as a reception desk.**

Restrooms

Inaccessible restrooms do not have signs indicating the direction of accessible restrooms

- Option 1: Make every restroom accessible.
- **Option 2: Post signs at inaccessible restrooms with directions to accessible ones.**

Main Floor Restrooms

It was claimed that the female employees' restroom is frequently used by the public. Visitors to town hall often bother employees for directions to one or the other restroom, as the two are far apart.

- Option 1: There already are paper signs posted that designate the employee restrooms. When accessible signage is added to all offices in the building, ensure that the bathrooms also receive signs, and include directions to the public restrooms / accessible restrooms.
- **Option 2: At the ladies' room, post a sign with directions to the men's room, and vice versa, so that lost citizens can find their way without distracting town employees.**

Offices

Offices are maxed on paper storage, and the storage sprawls into the aisles. Employees reportedly need to crawl over their boxes to reach certain things. There must be an accessible route 36" wide to public spaces, and in some places it is fairly tight.

- **Option 1: Relocate boxes that sprawl into office aisles into a new storage area. Possible locations include:**
  - **Option 1A: the attic,**
  - **Option 1B: the Historical Commission's old office,**
  - Option 1C: the VA office,
  - Option 1D: the Cemetery Department's office were the Cemetery Department to relocate to the highway barn, or
  - Option 1E: one of the rooms that CHIP-IN occupies were CHIP-IN to relocate.
- **Option 2: Rearrange the layout of offices so that furniture is not in the way. The final test could be to walk around, holding a yardstick horizontally; if the yardstick bumps into any furniture, it needs to be moved so that there is 36" clearance for wheelchairs.**

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Amber Facchini
Andrea Goldstein

The Archive Room:

A concern was raised that the Board of Selectmen is not fulfilling its responsibilities regarding the conditions of the archive room. In particular, a need for humidity control was cited. After following up with a selectmen and the town administrator, as well as referencing town bylaws (sections 50-10 and 50-26), it was determined that the Board of Selectmen are not responsible for the storage conditions. Each department is in charge of its own file storage.

The archive room, which is used by almost every department, is also just about maxed. The archive room consists of shelving and boxes from the floor to the ceiling; some employees can have trouble reaching the upper storage.

- Option 1: Per Charlton's bylaws, there is no need for humidity control, and each department is in charge of its own storage. The Board of Selectmen are not responsible for the conditions in which each department stores its archive files, but it might still be worthwhile to install a dehumidifier in the room for employees' peace of mind and protection for the documents.
- **Option 2: Leave a small stepladder in the archive room to aid employees in reaching the higher shelves.**
- **Option 3: The attic is being severely underutilized; there is a lot of space up there that can be used for storage. There is both a finished section and an unfinished section. The finished section may be suitable for additional file storage, especially since the stairway that leads to the attic locks. The unfinished section may be suitable for storage of lighter items.**

The Town Collector and Assessor

There is a high need to communicate, but that chatter also can impede concentration on delicate work. Similarly, when discussing sensitive information, everyone can hear it, including anyone waiting for service at the window.

- **Option 1: Use instant message software, such as Microsoft Lync, to communicate some information. This reduces the noise level so employees can better concentrate, and does not risk breaking confidentially should a member of the public at the window overhear sensitive information.**
- Option 2: If the problem is more of a problem of the area being too loud to concentrate, encourage headphones or install a white noise filter.
- **Option 3: If the problem is more of a problem of protecting confidential information, add a soundproof shutter to the window to the public. Even some cloth curtains may help to absorb sound, and offer aesthetic appeal. One of the sewing groups from the senior center could perhaps make and donate curtains that meet the specifications for the service windows.**

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Amber Facchini
Andrea Goldstein

The Collector

The Collector has storage that needs to be frequently accessed, but is an eyesore to the public; there are forms in boxes underneath the postage machine.

- Option 1: If the main issue is that the storage is unpleasant to the eye, hide it; consider placing a tablecloth on the table that holds the postage machine.
- Option 2: Acquire wall storage, such as pamphlet holders, allowing the forms to still be frequently accessed but in a neater manner.
- **Option 3: Combine both options above; if the boxes of papers under the postage machine are moved, something else can take that space for storage, and be hidden from the public eye.**

Senior Center Main Room

The library area, Veteran's wall, and piano may need to be moved. The Bulletin Boards are poorly located; no one can reach them, and they are underneath the TV.

- Option 1: Install shelves on the wall suitable for holding books.
- Option 2: When compliant coat racks are added, shorten how wide the racks are. If the coat racks are not utilized to their full capacity, that area may be able to hold a bookshelf. In the image on screen, to the left, where the box is located could be an ideal location to nest a bookshelf into the wall, if the new coat racks take up less wall width.
- **Option 3: Do both of the above options to some degree.**
- **Option 4: Relocate the Veteran's Wall to a long enough stretch of wall that can hold it all, possibly:**
  - Option 4A: the hallway by CHIP-IN, or
  - **Option 4B: opposite the coat racks.**
- Option 5: The Veteran's Wall takes up a significant amount of wall space as a block, but could be broken down into smaller chunks. One possibility is to run a single row of the pictures around the room. Another possibility would be to scatter the wall into perhaps five or so even chunks to be distributed around the cafeteria where space is available
- **Option 6: Shift the piano over so that it is wedged next to the new set of stairs in a position similar to its current one, if the location is feasible after changes to the interior are done.**
- Option 7: Relocate either the bulletin board or the television so that the two are not right next to each other. Ensure there is a clear space in front of the bulletin board so that citizens can peruse it at their leisure.
- **Option 8: Relocate the bulletin board to where the Veteran's Wall currently is.**
- **Option 9: Supply additional pamphlet holders for the walls, likely to be placed near the offices of the director and outreach coordinator.**

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Amber Facchini
Andrea Goldstein

Senior Center Reception

The senior center has no place for a receptionist, and would like to have one, to be able to welcome people in.

- **Option 1: Designate a location for a volunteer receptionist. Contact the local high school with this volunteering opportunity, particularly the school's chapter of National Honor Society (NHS). NHS, as well as many sports teams, requires a set number of volunteer hours; students could sign up to volunteer as a greeter for the senior center. Since this is not a full-time position, the students would not need much space; just a place to sit and perhaps a small desk to do homework at. Consider placing a landline at the desk.**
- Option 2: Play a prerecorded greeting / directions over a monitor placed near the entrance.
- **Option 3: Place a bell over the entrance so Deb and Elaine have an idea of how many people are coming and going.**

Senior Center Kitchen

The kitchen is too small, and its storage spills into the room behind it. Similarly, the kitchen is noisy, and can disrupt activities.

The interior door hardware to storage cabinets are non-compliant. Hardware should be easily operable by one hand or a closed fist (there are knobs).

- **Option 1: Replace the cabinet knobs with more accessible hardware that can be operated by someone with limited use of his/her hands.**
- Option 2: Replace the cabinets with ones that can both hold more storage and be accessed by someone with limited use of his/her hands. If new cabinets can be installed that are able to hold more items, the spillover of foodstuff to the room behind the kitchen can be reduced.
- Option 3: Add a modular wall to the cafeteria so that the kitchen area can be partitioned off during events. This will help control noise, as well as offer two separate spaces if there were to be two smaller events held at the same time.

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Senior Center Multi-Purpose Room

The pool table in the multi-purpose/pool room, which is being used as a table, does not have proper knee clearance, and there is storage under it.

After changes to the main room of the senior center, it may be difficult to roll the folding tables that are stored in the multi-purpose room out into the main room.

- Option 1: Remove the board that covers the pool table. A pool table does not require knee clearance by ADA standards, but a table does.
- Option 2: Elevate the legs of the pool table. The table can be no higher than 34" tall and must have knee space that is 27" high, 30" wide, and 19" deep. The storage under the table will also need to be moved to provide for the depth. Seasonal decorations in the room can be moved to the unfinished side of the attic.
- **Option 3: Only use the table for standing access; do not put any chairs around it.**
- **Option 4: Store the folding tables in the room behind the kitchen, and move seasonal items from that room into the attic to make more room.**
- Option 5: Leave the tables where they are and address any problems with moving them as they arise.

The Employee Break Room

The Council on Aging is entrenched in the employee break room, and needs that space. The Town Hall is required to have a break room, so the Council on Aging cannot fully take over the space. The break room, in its current state, is not much of a break room - no one stays in it, but may come for coffee or to access the refrigerator. One employee from the main floor was unaware that Town Hall even had a break room.

- Option 1: Give the existing break room to the Council on Aging and create a new employee break room elsewhere in the building, such as in the area that the Historical Commission is vacating, or in the room where the VA office currently is.
- **Option 2: Offer the Council on Aging alternative space nearby, such as in the room where the cemetery commission currently is, and reclaim the employee break room.**

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Meeting Area

There is not a moderately large, private meeting area in the entire building. Employees need a good location for roundtable discussions with outside clients.

Additional Employee Input: A private meeting area with a computer in it would also be beneficial, so that town employees in meetings with residents can access files that they might need.

- Option 1: Use the space that the Historical Commission is vacating as a designated meeting area.
- Option 2: Replace the furniture in the Selectmen's Meeting Room with more portable furnishings. If the room can be more easily rearranged, it could serve more purposes, such as roundtable discussions.
- Option 3: If CHIP-IN were not on the lower level, a meeting area could occupy one of those two rooms.
- **Option 4: Use the space that will be made by combining the VA Office and existing conference room as a new, larger conference room. Add a projector setup to the room.**

CHIP-IN

Three concerns were raised regarding CHIP-IN: rodents, ADA, and fire safety. One concern is that it brings rats into the building. While on site, the team saw evidence of rodents. One department was using dryer sheets to combat mice, and another mentioned finding mice in its storage. Second, it was stated that many recipients of aid from CHIP-IN are elderly or otherwise disabled citizens. The line for CHIP-IN often spans the nearby staircase, and is an accessibility problem. This also conflicts with the aim of anonymity for recipients of CHIP-IN, as everyone on the stairway is highly visible. Third, the throng of people block the area off, so if there were to be an emergency, evacuation could be problematic; there appear to be traffic flow problems.

- Option 1: Relocate CHIP-IN to another non-profit, perhaps a church or some place that is accustomed to storing food.
- **Option 2: Add a ramp outside the building by CHIP-IN to make that entrance also ADA accessible. Guide traffic in such a way (and leave signs with arrows to direct the flow) that citizens do not double-back to exit from where they entered. Ensure there is enough space that the crowd does not go up the interior stairs. Consider lining up recipients inside the long hallway by CHIP-IN and having them exit via the back entrance, if it has a ramp.**

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Cable Studio

Town Hall is considering housing a cable studio that might otherwise move to Spencer, as it needs a location.

- Option 1: Set the cable studio up in the office that the Historical Commission is vacating.
- Option 2: Set the cable studio up in the office in the Highway Barn that was meant for the Cemetery Commission.
- Option 3: If the Cemetery Commission were to relocate, set the cable studio up in the Cemetery Commission's old location.
- Option 4: If CHIP-IN were not on the lower level, the cable studio could occupy one of those rooms.
- **Option 5: Set the cable studio up in the high school. This is how Auburn has its local cable studio set up, and this benefits the school as well. Students are offered a film course in which they can learn how to use the film equipment and help run programs.**

A Summary of Changes to be Made if All Optimal Recommendations are Followed

In the building overall, add bells over the doors at the entrances so that it is known when someone exits or enters. Inaccessible restrooms will have signs with directions to accessible one. Sprawling boxes in offices will be moved to storage in the Historical Commission's old office and the attic. Office furniture will be rearranged to accommodate 36" of clearance for wheelchairs.

In the senior center, install some shelves on the wall suitable for holding books. When compliant coat racks are added, shorten how wide the racks are and nest a bookshelf in the wall. Relocate the Veteran's Wall to the wall opposite the coat racks. Shift the piano over so that it is wedged next to the new set of stairs in a position similar to its current one, if the location is feasible after changes to the interior are done. Relocate the bulletin board to where the Veteran's Wall currently is. Supply additional pamphlet holders for the walls, likely to be placed near the offices of the director and outreach coordinator. Replace the cabinet knobs in the kitchen with more accessible hardware that can be operated by someone with limited use of his/her hands. Only use the pool table for standing access; do not put any chairs around the table. Move the folding tables that are stored in the multi-purpose room to the storage room behind the kitchen.

Elsewhere on the lower floor, relocate the Cemetery Commission to the highway barn and use its old office for additional storage. Offer the Council on Aging alternative space near the break room, such as in the room where the cemetery commission currently is, and reclaim the employee break room. Move seasonal decorations to the attic. Leave a small stepladder in the archive room to aid employees in reaching the higher shelves. Add a ramp outside the building by CHIP-IN to make that entrance also ADA accessible. Guide traffic in such a way (using signs with arrows to direct the flow) that citizens do not double-back to exit from where they entered. Ensure there is enough space that the crowd does not go up the interior stairs. Consider lining up recipients inside the long hallway by CHIP-IN and having them exit via the back entrance, if it has a ramp.

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

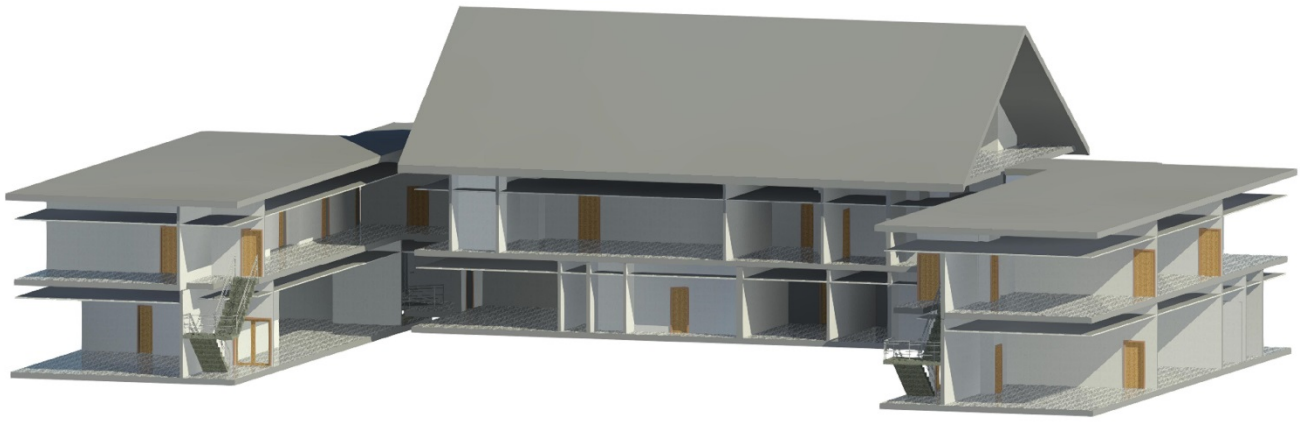
On the main floor, use instant message software, such as Microsoft Lync, to communicate some information. Add cloth curtains to service windows to help to absorb sound. One of the sewing groups from the senior center could perhaps make and donate curtains that meet the specifications for the service windows. Add pamphlet holders to the Collector's Office to better organize paper, and cover the table on which the postage machine lays with a tablecloth. In the hallway by the Planning Board, replace the desk with a smaller desk, and rotate the workstation 90 degrees so that when the chair is pulled out, it does not decrease the clearance in the hallway. At the ladies' room, post a sign with directions to the men's room, and vice versa, so that lost citizens can find their way without distracting town employees.

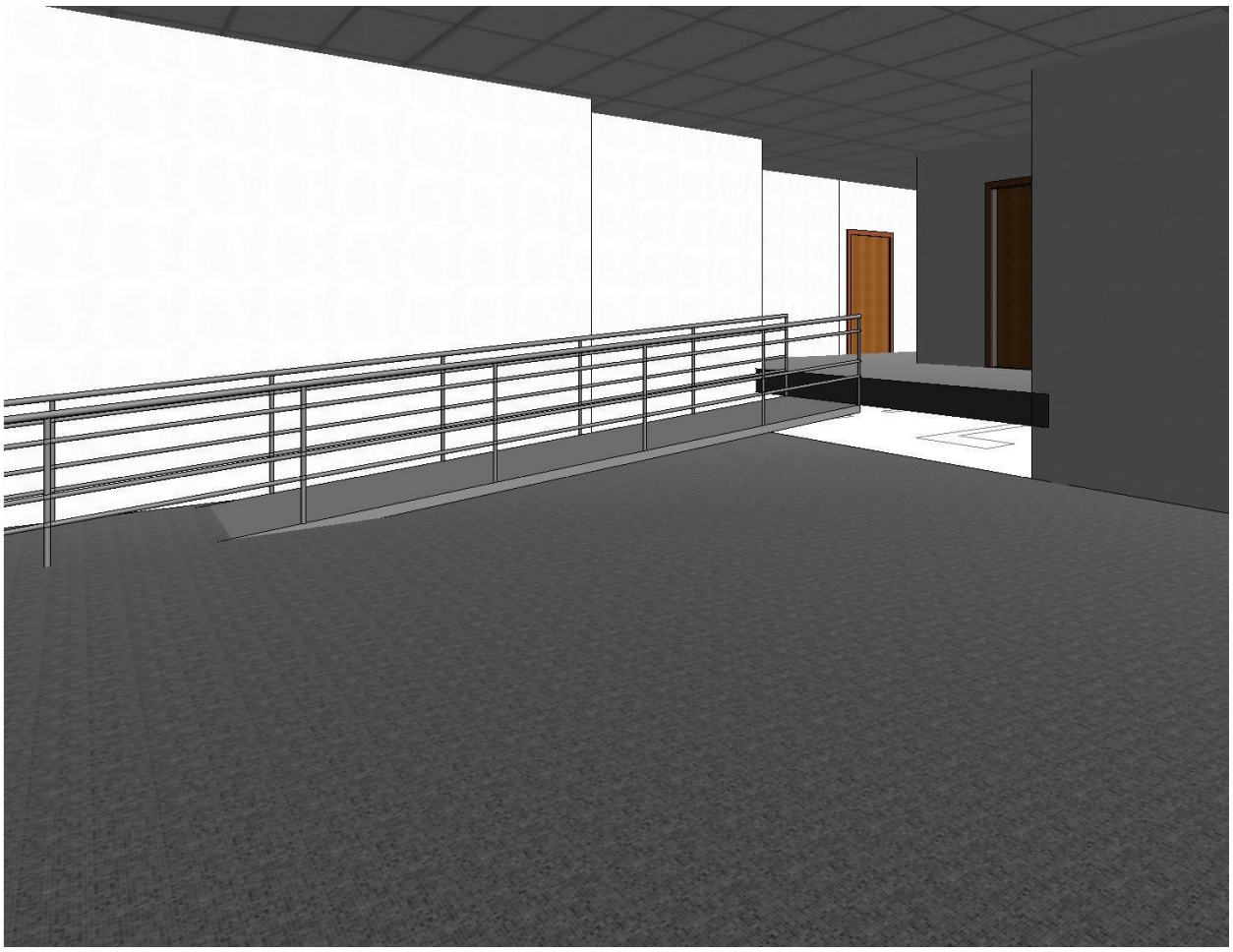
Outside the building, post signs before inaccessible entrances that alert people that they are not accessible and offer directions to the accessible entrance. When the main entrance to the senior center is moved to the base of the ramp, do not move the mailbox next to it again. Do not place anything within 18" of the pull side of the door, next to the handle. Designate a larger parking space specifically for larger vehicles except for when the lot is full. This allows construction vehicles to park easier and could allow a shuttle to park, if there were to eventually be established a shuttle from, for instance, a nursing home to Town Hall.

For wish list locations, use the space that will be made by combining the VA Office and existing conference room as a new, larger conference room. Add a projector setup to the room. Designate a location for a volunteer receptionist by the new senior center entrance. Contact the local high school with this volunteering opportunity, particularly the school's chapter of NHS, as well as sports teams. Provide a small desk and consider placing a landline at the desk. Place a bell over the entrances so that Deb and Elaine have an idea of how many people are coming and going. Set the cable studio up in the high school.

Optimal recommendations are bolded. Recommendations were deemed optimal based on feasibility, lower expense, and less disruption to the building. All optimal recommendations can be done together; they do not conflict. Paper storage, the greatest need, was prioritized.

Appendix H: Other Helpful Revit Models





Appendix I: The Completed ADA Checklist

Checklist for Existing Facilities version 2.1

The Americans with Disabilities Act
Checklist for Readily Achievable Barrier Removal
August 1995

ADA
TITLE III
COMPLIANCE MATERIALS

To obtain additional copies of this **checklist,** *contact your Disability and Business Technical Assistance Center. To be automaticallly connected to your regional center, call* **1-800-949-4ADA.** *This* **checklist** *may be copied as many times as desired by the Disability and Business Technical Assistance Centers for distribution to small businesses but may not be reproduced in whole or in part and sold by any other entity without written permission of Adaptive Environments, the author.*

Barrier Free Environments, Inc. and Adaptive Environments Center, Inc. are authorized by the National Institute on Disability and Rehabilitation Research (NIDRR) to develop information and materials on the Americans with Disabilities Act (ADA). However, you should be aware that NIDRR is not responsible for enforcement of the ADA. The information, presented here is intended solely as informal guidance, and is neither a determination of your legal rights or responsibilities under the Act, nor binding on any agency with enforcement responsibility under the ADA.

Checklist for Existing Facilities version 2.1

Introduction

Title III of the **Americans with Disabilities Act** requires public accommodations to provide goods and services to people with disabilities on an equal basis with the rest of the general public. The goal is to afford every individual the opportunity to benefit from our country's businesses and services, and to afford our businesses and services the opportunity to benefit from the patronage of all Americans.

The regulations require that architectural and communication barriers that are structural must be removed in public areas of **existing facilities** when their removal is **readily achievable**—in other words, easily accomplished and able to be carried out without much difficulty or expense. **Public accommodations** that must meet the barrier removal requirement include a broad range of establishments (both for-profit and nonprofit)—such as hotels, restaurants, theaters, museums, retail stores, private schools, banks, doctors' offices, and other places that serve the public. People who own, lease, lease out, or operate places of public accommodation in existing buildings are responsible for complying with the barrier removal requirement.

The removal of barriers can often be achieved by making simple changes to the physical environment. However, the regulations do not define exactly how much effort and expense are required for a facility to meet its obligation. This judgment must be made on a case-by-case basis, taking into consideration such factors as the size, type, and overall financial resources of the facility, and the nature and cost of the access improvements needed. These factors are described in more detail in the ADA regulations issued by the Department of Justice.

The process of determining what changes are readily achievable is not a one-time effort; access should be re-evaluated annually. Barrier removal that might be difficult to carry out now may be readily achievable later. Tax incentives are available to help absorb costs over several years.

Purpose of This Checklist

This checklist will help you identify accessibility problems and solutions in existing facilities in order to meet your obligations under the ADA.

The goal of the survey process is to plan how to make an existing facility more usable for people with disabilities. The Department of Justice (DOJ) recommends the development of an Implementation Plan, specifying what improvements you will make to remove barriers and when each solution will be carried out: "...Such a plan...could serve as evidence of a good faith effort to comply...."

Technical Requirements

This checklist details some of the requirements found in the ADA Standards for Accessible Design (Standards). The ADA Accessibility Guidelines (ADAAG), when adopted by DOJ, became the Standards. The Standards are part of the Department of Justice Title III Regulations, 28 CFR Part 36 (*Nondiscrimination on the basis of disability... Final Rule*). Section 36.304 of this regulation, which covers barrier removal, should be reviewed before this survey is conducted.

However, keep in mind that full compliance with the Standards is required only for new construction and alterations. The requirements are presented here as a guide to help you determine what may be readily achievable barrier removal for existing facilities. The Standards should be followed for all barrier removal unless doing so is not readily achievable. If complying with the Standards is not readily achievable, you may undertake a modification that does not fully comply, as long as it poses no health or safety risk.

In addition to the technical specifications, each item has a scoping provision, which can be found under Section 4.1 in the Standards. This section clarifies when access is required and what the exceptions may be.

Each state has its own regulations regarding accessibility. To ensure compliance with all codes, know your state and local codes and use the more stringent technical requirement for every modification you make; that is, the requirement that provides greater access for individuals with disabilities. The barrier removal requirement for existing facilities is new under the ADA and supersedes less stringent local or state codes.

What This Checklist is Not

This checklist does not cover all of the requirements of the Standards; therefore, it is **not** for facilities undergoing new construction or alterations. In addition, it does not attempt to illustrate all possible barriers or propose all possible barrier removal solutions. The Standards should be consulted for guidance in situations not covered here.

The Title III regulation covers more than barrier removal, but this checklist does **not** cover Title III's requirements for nondiscriminatory policies and practices and for the provision of auxiliary communication aids and services. The communication features covered are those that are **structural** in nature.

Priorities

This checklist is based on the four priorities recommended by the Title III regulations for planning readily achievable barrier removal projects:

Priority 1: Accessible **approach and entrance**
Priority 2: Access to **goods and services**
Priority 3: Access to **rest rooms**
Priority 4: Any **other measures** necessary

Note that the references to ADAAG throughout the checklist refer to the Standards for Accessible Design.

How to Use This Checklist

✓ **Get Organized:** Establish a time frame for completing the survey. Determine how many copies of the checklist you will need to survey the whole facility. Decide who will conduct the survey. It is strongly recommended that you invite two or three additional people, including people with various disabilities and accessibility expertise, to assist in identifying barriers, developing solutions for removing these barriers, and setting priorities for implementing improvements.

✓ **Obtain Floor Plans:** It is very helpful to have the building floor plans with you while you survey. If plans are not available, use graph paper to sketch the layout of all interior and exterior spaces used by your organization. Make notes on the sketch or plan while you are surveying.

✓ **Conduct the Survey:** Bring copies of this checklist, a clipboard, a pencil or pen, and a flexible steel tape measure. With three people surveying, one person numbers key items on the floor plan to match with the field notes, taken by a second person, while the third takes measurements. ***Be sure to record all dimensions!*** As a reminder, questions that require a dimension to be measured and recorded are marked with the ruler symbol. Think about each space from the perspective of people with physical, hearing, visual, and cognitive disabilities, noting areas that need improvement.

✓ **Summarize Barriers and Solutions:** List barriers found and ideas for their removal. Consider the solutions listed beside each question, and add your own ideas. Consult with building contractors and equipment suppliers to estimate the costs for making the proposed modifications.

✓ **Make Decisions and Set Priorities:** Review the summary with decision makers and advisors. Decide which solutions will best eliminate barriers at a reasonable cost. Prioritize the items you decide upon and make a timeline for carrying them out. Where the removal of barriers is not readily achievable, you must consider whether there are **alternative methods** for providing access that *are* readily achievable.

✓ **Maintain Documentation:** Keep your survey, notes, summary, record of work completed, and plans for alternative methods on file.

✓ **Make Changes:** Implement changes as planned. Always refer directly to the Standards and your state and local codes for complete technical requirements before making any access improvement. References to the applicable sections of the Standards are listed at the beginning of each group of questions. If you need help understanding the federal, state, or local requirements, contact your Disability and Business Technical Assistance Center.

✓ **Follow Up:** Review your Implementation Plan each year to re-evaluate whether more improvements have become readily achievable.

To obtain a copy of the Title III regulations and the Standards or other technical information, call the U.S. Dept. of Justice ADA Information Line at (800) 514-0301 Voice, (202) 514-0381 TDD, or (800) 514-0383 TDD. For questions about ADAAG, contact the Architectural and Transportation Barriers Compliance Board at (800) USA-ABLE.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Priority 1 Accessible Approach/Entrance People with disabilities should be able to arrive on the site, approach the building, and enter as freely as everyone else. At least one route of travel should be safe and accessible for everyone, including people with disabilities.			
Route of Travel (ADAAG 4.3, 4.4, 4.5, 4.7) Is there a route of travel that does not require the use of stairs?	☑	☐	☐ Add a ramp if the route of travel is interrupted by stairs. ☐ Add an alternative route on level ground.
Is the route of travel stable, firm and slip-resistant?	☐	☐	☐ Repair uneven paving. ☐ Fill small bumps and breaks with beveled patches. ☐ Replace gravel with hard top.
Is the route at least 36 inches wide?	☐ ☐ ☐ width		☐ Change or move landscaping, furnishings, or other features that narrow the route of travel. ☐ Widen route.
Can all objects protruding into the circulation paths be detected by a person with a visual disability using a cane? **In order to be detected** using a cane, an object must be within 27 inches of the ground. Objects hanging or mounted overhead must be higher than 80 inches to provide clear head room. It is not necessary to remove objects that protrude less than 4 inches from the wall.	☐ ☐ ☐ distance from wall / height		☐ Move or remove protruding objects. ☐ Add a cane-detectable base that extends to the ground. ☐ Place a cane-detectable object on the ground underneath as a warning barrier.
Do curbs on the route have curb cuts at drives, parking, and drop-offs?	☐	☐	☐ Install curb cut. ☐ Add small ramp up to curb.
Ramps (ADAAG 4.8) Are the slopes of ramps no greater than 1:12? **Slope is given as a ratio of the height to the length.** 1:12 means for every 12 inches along the base of the ramp, the height increases one inch. For a 1:12 maximum slope, **at least** one foot of ramp length is needed for each inch of height.	☐ ☑ ☐ slope .085 1:02 : 12		☐ Lengthen ramp to decrease slope. ☐ Relocate ramp. ☐ If available space is limited, reconfigure ramp to include switchbacks.

will be getting a new one

can probably leave it or lengthen ramp by 8" significant amt for insign. gain, makes curb tighter

existing building OK, but not totally compliant

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Ramps, continued Do all ramps longer than 6 feet have railings on both sides?	☑	☐	☐ Add railings.
Are railings sturdy, and between 34 and 38 inches high?	☐	☑	☐ Adjust height of railing if not between 30 and 38 inches. → is close enough ☐ Secure handrails in fixtures.
	32" (height)		
Is the width between railings or curbs at least 36 inches?	☑	☐	☐ Relocate the railings. ☐ Widen the ramp.
	(width)		
Are ramps non-slip?	☑	☐	☐ Add non-slip surface material.
Is there a 5-foot-long level landing at every 30-foot horizontal length of ramp, at the top and bottom of ramps and at switchbacks?	☐	☑	☐ Remodel or relocate ramp. not
	~27.3' (length)		
Does the ramp rise no more than 30 inches between landings? slope: .085	☑	☐	☐ Remodel or relocate ramp.
	(rise)		
Parking and Drop-Off Areas (ADAAG 4.6) Are an adequate number of accessible parking spaces available (8 feet wide for car plus 5-foot access aisle)? For guidance in determining the appropriate number to designate, the table below gives the ADAAG requirements for new construction and alterations (for lots with more than 100 spaces, refer to ADAAG):	☑	☐	☐ Reconfigure a reasonable number of spaces by repainting stripes.
	(number of accessible spaces)		
back: 29 **Total spaces** / **Accessible** 1 to 25 — 1 space 26 to 50 — 2 spaces 51 to 75 — 3 spaces 76 to 100 — 4 spaces	Note widths of existing accessible spaces: front: 15 slots, 2 handicap; side: 6/6 handicap, 1 has large dip		
Are 8-foot-wide spaces, with minimum 8-foot-wide access aisles, and 98 inches of vertical clearance, available for lift-equipped vans?	☑	☐	☐ Reconfigure to provide van-accessible space(s).
	(width / vertical clearance)		
At least one of every 8 accessible spaces must be van-accessible (with a minimum of one van-accessible space in all cases).	both are		

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Parking and Drop-Off Areas, continued			
Are the access aisles part of the accessible route to the accessible entrance?	☑	☐	☐ Add curb ramps. ☐ Reconstruct sidewalk.
Are the accessible spaces closest to the accessible entrance? after elevator, no	☐	☑	☑ Reconfigure spaces.
Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?	☑	☐	☐ Add signs, placed so that they are not obstructed by cars.
Is there an enforcement procedure to ensure that accessible parking is used only by those who need it?	☑	☐	☐ Implement a policy to check periodically for violators and report them to the proper authorities.
Entrance (ADAAG 4.13, 4.14, 4.5)			
If there are stairs at the main entrance, is there also a ramp or lift, or is there an alternative accessible entrance?	☑	☐	☐ If it is not possible to make the main entrance accessible, create a dignified alternate accessible entrance. If parking is provided, make sure there is accessible parking near all accessible entrances.
Do not use a service entrance as the accessible entrance unless there is no other option.			
Do all inaccessible entrances have signs indicating the location of the nearest accessible entrance? must do	☐	☑	☑ Install signs before inaccessible entrances so that people do not have to retrace the approach.
Can the alternate accessible entrance be used independently?	☑	☐	☐ Eliminate as much as possible the need for assistance—to answer a doorbell, to operate a lift, or to put down a temporary ramp, for example.
Does the entrance door have at least 32 inches clear opening (for a double door, at least one 32-inch leaf)? 36" clear opening	☑	☐	☐ Widen the door to 32 inches clear. ☐ If technically infeasible, widen to 31-3/8 inches minimum. ☐ Install offset (swing-clear) hinges.
Is there at least 18 inches of clear wall space on the pull side of the door, next to the handle? clear space	☐	☑	☑ Remove or relocate furnishings, partitions, or other obstructions. or center mail slot + lamp is 78" up - needs to be 2" higher ☐ Move door. ☐ Add power-assisted or automatic door opener.
A person using a wheelchair or crutches needs this space to get close enough to open the door.			

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Entrance, continued			
Is the threshold edge 1/4-inch high or less, or if beveled edge, no more than 3/4-inch high?	☑	☐ height	☐ If there is a single step with a rise of 6 inches or less, add a short ramp. ☐ If there is a threshold greater than 3/4-inch high, remove it or modify it to be a ramp.
If provided, are carpeting or mats a maximum of 1/2-inch high?	☑	☐ height	☐ Replace or remove mats.
Are edges securely installed to minimize tripping hazards?	☑	☐	☐ Secure carpeting or mats at edges.
Is the door handle no higher than 48 inches and operable with a closed fist? **The "closed fist" test for handles and controls:** Try opening the door or operating the control using only one hand, held in a fist. If you can do it, so can a person who has limited use of his or her hands.	☑	☑ height	☐ Lower handle. ☐ Replace inaccessible knob with a lever or loop handle. ☐ Retrofit with an add-on lever extension.
Can doors be opened without too much force (exterior doors reserved; maximum is 5 lbf for *interior* doors)? Senior Center door needs more force **You can use an inexpensive force meter or a fish scale** to measure the force required to open a door. Attach the hook end to the doorknob or handle. Pull on the ring end until the door opens, and read off the amount of force required. If you do not have a force meter or a fish scale, you will need to judge subjectively whether the door is easy enough to open.	☐	☑ force	☐ Adjust the door closers and oil the hinges. ☐ Install power-assisted or automatic door openers. ☐ Install lighter doors.
If the door has a closer, does it take at least 3 seconds to close?	☑	☐ seconds	☐ Adjust door closer.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Priority 2 Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain materials or services without assistance.			
Horizontal Circulation (ADAAG 4.3) Does the accessible entrance provide direct access to the main floor, lobby, or elevator?	☐	☑	☐ Add ramps or lifts. ☑ Make another entrance accessible. → elevator
Are all public spaces on an accessible route of travel? routes are sometimes roundabout ext step up	☑	☐	☐ Provide access to all public spaces along an accessible route of travel.
Is the accessible route to all public spaces at least 36 inches wide? floor plans ☐ width	☑	☐	☐ Move furnishings such as tables, chairs, display racks, vending machines, and counters to make more room.
Is there a 5-foot circle or a T-shaped space for a person using a wheelchair to reverse direction? ☐ width	☐	☑	☑ Rearrange furnishings, displays, and equipment. table w/ puzzles at bottom of ramp
Doors (ADAAG 4.13) Do doors into public spaces have at least a 32-inch clear opening? ☐ clear opening	☑	☐	☐ Install offset (swing-clear) hinges. ☐ Widen doors.
On the pull side of doors, next to the handle, is there at least 18 inches of clear wall space so that a person using a wheelchair or crutches can get near to open the door? ☐ clear space	☑	☐	☐ Reverse the door swing if it is safe to do so. ☐ Move or remove obstructing partitions.
Can doors be opened without too much force (5 lbf maximum for interior doors)? ☐ force	☐	☐	☐ Adjust or replace closers. ☐ Install lighter doors. ☐ Install power-assisted or automatic door openers.
Are door handles 48 inches high or less and operable with a closed fist? ☐ height	☑	☐	☐ Lower handles. ☐ Replace inaccessible knobs or latches with lever or loop handles. ☐ Retrofit with add-on levers. ☐ Install power-assisted or automatic door openers.
Are all threshold edges 1/4-inch high or less, or if beveled edge, no more than 3/4-inch high? 1" step into multipurpose room ☐ height	☐	☑	☐ If there is a threshold greater than 3/4-inch high, remove it or modify it to be a ramp. ☐ If between 1/4- aand 3/4-inch high, add bevels to both sides.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Rooms and Spaces (ADAAG 4.2, 4.4, 4.5) Are all aisles and pathways to materials and services at least 36 inches wide? offices – storage in way	☐	☑ ☐ width	☑ Rearrange furnishings and fixtures to clear aisles.
Is there a 5-foot circle or T-shaped space for turning a wheelchair completely? in public spaces, YES	☑	☐ width	☐ Rearrange furnishings to clear more room.
Is carpeting low-pile, tightly woven, and securely attached along edges?	☑	☐	☐ Secure edges on all sides. ☐ Replace carpeting.
counters for collector + lip come out 5" In circulation paths through public areas, are all obstacles cane-detectable (located within 27 inches of the floor or higher than 80 inches, or protruding less than 4 inches from the wall)?	☐	☑ ☐ height/ protrusion	☐ Remove obstacles. ☑ Install furnishings, planters, or other cane-detectable barriers underneath.
Emergency Egress (ADAAG 4.28) If emergency systems are provided, do they have both flashing lights and audible signals?	☐	☑	☐ Install visible and audible alarms. ☐ Provide portable devices.
Signage for Goods and Services (ADAAG 4.30) Different requirements apply to different types of signs.			
If provided, do signs and room numbers designating permanent rooms and spaces where goods and services are provided comply with the appropriate requirements for such signage?	☐	☑	☑ Provide signs that have raised letters, Grade II Braille, and that meet all other requirements for permanent room or space signage. (See ADAAG 4.1.3(16) and 4.30.)
• Signs mounted with centerline 60 inches from floor. not mounted on doors, except for paper signs	Y ☐	N ☑ ☐ height	
• Mounted on wall adjacent to latch side of door, or as close as possible.	☐	☑	
• Raised characters, sized between 5/8 and 2 inches high, with high contrast (for room numbers, rest rooms, exits).	☐	☑ ☐ character height	
• Brailled text of the same information.	☐	☑	
• If pictogram is used, it must be accompanied by raised characters and braille.	☐	☑	

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Directional and Informational Signage The following questions apply to directional and informational signs that fall under Priority 2.			
If mounted above 80 inches, do they have letters at least 3 inches high, with high contrast, and non-glare finish?	☑	☐ letter height	☐ Review requirements and replace signs as needed, meeting the requirements for character size, contrast, and finish.
Do directional and informational signs comply with legibility requirements? (Building directories or temporary signs need not comply.)	☑	☐	☐ Review requirements and replace signs as needed.
Controls (ADAAG 4.27) Are all controls that are available for use by the public (including electrical, mechanical, cabinet, game, and self-service controls) located at an accessible height? **Reach ranges:** The maximum height for a side reach is 54 inches; for a forward reach, 48 inches. The minimum reachable height is 15 inches for a front approach and 9 inches for a side approach.	☐ height	☐	☐ Relocate controls.
Are they operable with a closed fist?	☑	☐	☐ Replace controls.
Seats, Tables, and Counters (ADAAG 4.2, 4.32, 7.2) Are the aisles between fixed seating (other than assembly area seating) at least 36 inches wide?	☑ width	☐	☐ Rearrange chairs or tables to provide 36-inch aisles.
Are the spaces for wheelchair seating distributed throughout? N/A	☐	☐	☐ Rearrange tables to allow room for wheelchairs in seating areas throughout the area. ☐ Remove some fixed seating.
Are the tops of tables or counters between 28 and 34 inches high? counters by assessors etc are not in this range - ~48"	☐ height	☑	☐ Lower part or all of high surface. ☐ Provide auxiliary table or counter.
Are knee spaces at accessible tables at least 27 inches high, 30 inches wide, and 19 inches deep? pool table in multipurpose room no depth + storage under	☐ height/ width/ depth	☑	☑ Replace or raise tables. remove the storage

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Seats, Tables, and Counters, continued At each type of cashier counter, is there a portion of the main counter that is no more than 36 inches high? board of health 33" assessor 43" collector 45"	☐	☑	☐ Provide a lower auxiliary counter or folding shelf. ☐ Arrange the counter and surrounding furnishings to create a space to hand items back and forth.
Is there a portion of food-ordering counters that is no more than 36 inches high, or is there space at the side for passing items to customers who have difficulty reaching over a high counter? N/A	☑	☐	☐ Lower section of counter. ☐ Arrange the counter and surrounding furnishings to create a space to pass items.
Vertical Circulation (ADAAG 4.1.3(5), 4.3) Are there ramps, lifts, or elevators to all public levels? will be	☐	☐	☐ Install ramps or lifts. ☐ Modify a service elevator. ☐ Relocate goods or services to an accessible area.
will be On each level, if there are stairs between the entrance and/or elevator and essential public areas, is there an accessible alternate route?	☐	☐	☐ Post clear signs directing people along an accessible route to ramps, lifts, or elevators.
Stairs (ADAAG 4.9) The following questions apply to stairs connecting levels *not* serviced by an elevator, ramp, or lift. Do treads have a non-slip surface?	☑	☐	☐ Add non-slip surface to treads.
Do stairs have continuous rails on both sides, with extensions beyond the top and bottom stairs?	☑	☐	☐ Add or replace handrails if possible within existing floor plan.
N/A **Elevators (ADAAG 4.10)** Are there both visible and verbal or audible door opening/closing and floor indicators (one tone = up, two tones = down)?	☐	☐	☐ Install visible and verbal or audible signals.
Are the call buttons in the hallway no higher than 42 inches?	☐ height	☐	☐ Lower call buttons. ☐ Provide a permanently attached reach stick.
Do the controls inside the cab have raised and braille lettering?	☐	☐	☐ Install raised lettering and braille next to buttons.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Elevators, continued			
Is there a sign on both door jambs at every floor identifying the floor in raised and braille letters?	☐	☐	☐ Install tactile signs to identify floor numbers, at a height of 60 inches from floor.
If an emergency intercom is provided, is it usable without voice communication?	☐	☐	☐ Modify communication system.
Is the emergency intercom identified by braille and raised letters?	☐	☐	☐ Add tactile identification.
Lifts (ADAAG 4.2, 4.11) N/A Can the lift be used without assistance? If not, is a call button provided?	☐	☐	☐ At each stopping level, post clear instructions for use of the lift. ☐ Provide a call button.
Is there at least 30 by 48 inches of clear space for a person in a wheelchair to approach to reach the controls and use the lift? (clear space)	☐	☐	☐ Rearrange furnishings and equipment to clear more space.
Are controls between 15 and 48 inches high (up to 54 inches if a side approach is possible)? (height)	☐	☐	☐ Move controls.

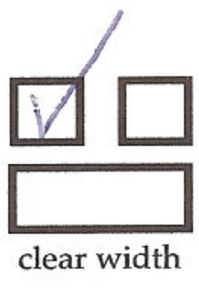
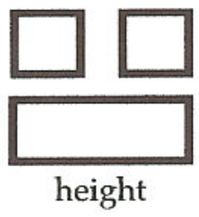
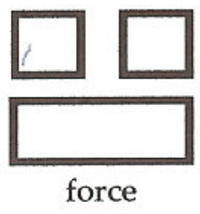
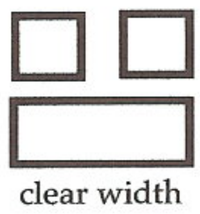
Priority **3**

Usability of Rest Rooms

When rest rooms are open to the public, they should be accessible to people with disabilities.

are being fixed

Getting to the Rest Rooms (ADAAG 4.1) If rest rooms are available to the public, is at least one rest room (either one for each sex, or unisex) fully accessible?	☐	☐	☐ Reconfigure rest room. ☐ Combine rest rooms to create one unisex accessible rest room.
Are there signs at inaccessible rest rooms that give directions to accessible ones?	☐	☑	☑ Install accessible signs.
Doorways and Passages (ADAAG 4.2, 4.13, 4.30) Is there tactile signage identifying rest rooms? **Mount signs on the wall**, on the latch side of the door, complying with the requirements for permanent signage. Avoid using ambiguous symbols in place of text to identify rest rooms.	☐	☑	☑ Add accessible signage, placed to the side of the door, 60 inches to centerline (not on the door itself).

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Doorways and Passages, continued Are pictograms or symbols used to identify rest rooms, and, if used, are raised characters and braille included below them?	☐	☑	☑ If symbols are used, add supplementary verbal signage with raised characters and braille below pictogram symbol.
Is the doorway at least 32 inches clear?  	☑	☐	☐ Install offset (swing-clear) hinges. ☐ Widen the doorway.
Are doors equipped with accessible handles (operable with a closed fist), 48 inches high or less?  	☐	☐	☐ Lower handles. ☐ Replace knobs or latches with lever or loop handles. ☐ Add lever extensions. ☐ Install power-assisted or automatic door openers.
Can doors be opened easily (5 lbf maximum force)?  	☐	☐	☐ Adjust or replace closers. ☐ Install lighter doors. ☐ Install power-assisted or automatic door openers.
Does the entry configuration provide adequate maneuvering space for a person using a wheelchair?  	☐	☐	☐ Rearrange furnishings such as chairs and trash cans. ☐ Remove inner door if there is a vestibule with two doors. ☐ Move or remove obstructing partitions.
A person in a wheelchair needs 36 inches of clear width for forward movement, and a 5-foot diameter or T-shaped clear space to make turns. A minimum distance of 48 inches clear of the door swing is needed between the two doors of an entry vestibule.			
Is there a 36-inch-wide path to all fixtures? not in the offices which are public 	☑	☐	☑ Remove obstructions.
Stalls (ADAAG 4.17) Is the stall door operable with a closed fist, inside and out?	☑	☐	☐ Replace inaccessible knobs with lever or loop handles. ☐ Add lever extensions.
Is there a wheelchair-accessible stall that has an area of at least 5 feet by 5 feet, clear of the door swing, OR is there a stall that is less accessible but that provides greater access than a typical stall (either 36 by 69 inches or 48 by 69 inches)?	☑	☐	☐ Move or remove partitions. ☐ Reverse the door swing if it is safe to do so.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Stalls, continued In the accessible stall, are there grab bars behind and on the side wall nearest to the toilet?	☐	☐	☐ Add grab bars.
Is the toilet seat 17 to 19 inches high? will be fixed ☐ height	☐	☐	☐ Add raised seat.
Lavatories (ADAAG 4.19, 4.24) are being updated Does one lavatory have a 30-inch-wide by 48-inch-deep clear space in front? **A maximum of 19 inches of the required depth may be under the lavatory.** ☐ clear space	☑	☐	☐ Rearrange furnishings. ☐ Replace lavatory. ☐ Remove or alter cabinetry to provide space underneath. ☐ Make sure hot pipes are covered. ☐ Move a partition or wall.
Is the lavatory rim no higher than 34 inches? ☐ height	☐	☐	☐ Adjust or replace lavatory.
Is there at least 29 inches from the floor to the bottom of the lavatory apron (excluding pipes)? ☐ height	☐	☐	☐ Adjust or replace lavatory.
Can the faucet be operated with one closed fist?	☐	☐	☐ Replace with paddle handles.
Are soap and other dispensers and hand dryers within reach ranges (see page 7) and usable with one closed fist?	☐	☐	☐ Lower dispensers. ☐ Replace with or provide additional accessible dispensers.
Is the mirror mounted with the bottom edge of the reflecting surface 40 inches high or lower? ☐ height	☐	☐	☐ Lower or tilt down the mirror. ☐ Add a larger mirror anywhere in the room.

Priority 4

Additional Access

Note that this priority is for items not required for basic access in the first three priorities.
When amenities such as drinking fountains and public telephones are provided, they should also be accessible to people with disabilities.

Drinking Fountains (ADAAG 4.15) Is there at least one fountain with clear floor space of at least 30 by 48 inches in front? ☐ clear space	☑	☐	☐ Clear more room by rearranging or removing furnishings.

QUESTIONS	Yes	No	POSSIBLE SOLUTIONS
Drinking Fountains, continued Is there one fountain with its spout no higher than 36 inches from the ground, and another with a standard height spout (or a single "hi-lo" fountain)?	☑	☐	☐ Provide cup dispensers for fountains with spouts that are too high. ☐ Provide accessible cooler.
Are controls mounted on the front or on the side near the front edge, and operable with one closed fist?	☑	☐	☐ Replace the controls.
Is each water fountain cane-detectable (located within 27 inches of the floor or protruding into the circulation space less than 4 inches from the wall?	☑	☐	☐ Place a planter or other cane-detectable barrier on each side at floor level.
Telephones (ADAAG 4.31) If pay or public use phones are provided, is there clear floor space of at least 30 by 48 inches in front of at least one?	☐	☐	☐ Move furnishings. ☐ Replace booth with open station.
Is the highest operable part of the phone no higher than 48 inches (up to 54 inches if a side approach is possible)?	☐	☐	☐ Lower telephone.
Does the phone protrude no more than 4 inches into the circulation space?	☐	☐	☐ Place a cane-detectable barrier on each side at floor level.
Does the phone have push-button controls?	☐	☐	☐ Contact phone company to install push-buttons.
Is the phone hearing-aid compatible?	☐	☐	☐ Have phone replaced with a hearing-aid compatible one.
Is the phone adapted with volume control?	☐	☐	☐ Have volume control added.
Is the phone with volume control identified with appropriate signage?	☐	☐	☐ Add signage.
If there are four or more public phones in the building, is one of the phones equipped with a text telephone (TT or TDD)?	☐	☐	☐ Install a text telephone. ☐ Have a portable TT available. ☐ Provide a shelf and outlet next to phone.
Is the location of the text telephone identified by accessible signage bearing the International TDD Symbol?	☐	☐	☐ Add signage.