

REPORT OF THE CAMPUS MASTER PLANNING COMMITTEE



LLB ARCHITECTS

January 29, 2016

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SECTION 1 - EXECUTIVE SUMMARY

INTRODUCTION

The Campus Master Planning Committee (CMPC) is a special purpose committee charged by the School Committee and the Board of Selectmen to answer certain basic capacity questions about the Ballfield Road Campus relating to its ability to accommodate additional uses, including a potential community center, and to help consider how desired uses might be most efficiently arranged on the Campus.

The Lincoln Board of Selectmen and the Lincoln School Committee jointly charged the CMPC in May of this year. The charge is easily distilled into two themes:

1. Informing the future planning for the contemplated school building and community center projects
2. Confirming the existing uses and needs for space on the Campus while also anticipating potential future uses, and then assessing the capacity of existing infrastructure to support these existing and projected uses

These two themes were each in turn considered through two consistent lenses:

1. The limits of the Campus (e.g. regulatory considerations, septic system analysis, traffic flow and movement research, parking data, etc.)
2. The use of space on the Campus (i.e. balance of land/open space use with the hardscape/buildings on the Campus)

As communicated by the School Committee and the Board of Selectmen, it is hoped that our work will inform future school building and community center discussions and planning efforts. It is important to emphasize that the CMPC was not asked to develop designs for any specific building, nor were we asked to develop detailed site plans. The responsibility for detailed building designs and site plans will fall to the School Committee and Selectmen, and more likely to the respective building committees they appoint, when and if the school building project and a community center project move forward.

COMMITTEE MEMBERSHIP

The Campus Master Planning Committee is comprised of Town of Lincoln staff and residents representing a wide-range of stakeholder groups and Town boards. The CMPC included ten voting and five non-voting members, all of whom worked diligently in a collaborative effort on behalf of Lincoln's residents to meet the CMPC's charge.

The CMPC was assisted throughout its efforts by a professional consultant team led by Lerner Ladds & Bartels Architects (LLB).

Voting members:

Ken Bassett,	Roadway & Traffic Committee
Vincent Cannistraro, Vice Chair	At large member
Tim Christenfeld,	School Committee
Paula Cobb,	At large member
Patty Donahue,	Parks & Recreation Committee
Renel Fredriksen,	Board of Selectmen
Carole Kasper, Chair	At large member
Peter von Mertens / Jim Meadors,	Conservation Committee
Dilla Tingley / Jack French,	Council on Aging
Bryce Wolf	Planning Board

Non-voting members:

Carolyn Bottum,	Council on Aging Director
Buckner Creel,	School Business and Finance Administrator
Tim Higgins,	Town Administrator
Becky McFall,	School Superintendent
Dan Pereira,	Parks & Recreation Director

Professional Consultants

Greg Smolley, AIA, APA, and Kathy Bartels, AIA, along with Patrick Torborg formed the core of the LLB team. Other consultants include John Steward from landscape architecture consultant CR3 LLP; Elizabeth (Liz) Pert, who led the traffic engineering team from Howard Stein Hudson, Eric Wilhelmsen from CDW Associates, who provided civil and environmental engineerings, and Peter Bradley of Project Management & Cost, who provided cost projections and estimates.

Working in very close harmony with the CMPC and consultants were the members of the Lincoln Police Department, led by Chief Kennedy, and the Lincoln Fire Department, led by Chief Carter. The gratitude of the committee and consultant team goes to these two gentlemen for the time, knowledge, and input they gave so generously.

COMMITMENT TO PUBLIC ENGAGEMENT

The CMPC committed itself to effectively engaging the Lincoln community with the same respect and professionalism they showed to each other as committee members. At every step of the planning process, the CMPC kept in mind the need to incorporate public input into the work produced. To provide the best possible ongoing opportunities for public engagement, all CMPC meetings were conducted in an open and accessible manner via an inclusive public gallery, encouraging members of the public to offer their insight and opinion in the same manner as members of the CMPC and the professional consultants. The meeting schedule was intentionally varied to encompass both daytime and evening meeting sessions on differing days of the week in order to attract a diverse complement of citizen voices to the public gallery throughout the arc of the many months of the work process.

The public engagement efforts also included intentional outreach to additional Lincoln groups who know and use the Ballfield Road Campus: Lincoln Historic Commission, Council on Aging (COA), Green Energy Technology Committee (GETC), Lincoln School Parent/Teacher Organization (PTO), Lincoln Family Association (LFA), and Lincoln Youth Soccer (LYS). Strong, ongoing relationships were established with each of these groups by inviting them to attend the committee meetings and public forums, and remaining accommodating to the input they provided the committee throughout the planning process.

Five public outreach opportunities took place across September, October, and November. Each event allowed the CMPC to present information and the community to provide input. These forums consisted of both daytime and evening opportunities for the Lincoln community, each designed to maximize both the information conveyed and the chance for the public to offer individual thought and perspective regarding the planning efforts. These engagements advanced the understanding of the community's view of the Campus as well as the aspects that will be most important in the future.

WORK PROCESS AND CONCLUSIONS

From the first phase of the planning process, it was apparent that the Campus has evolved without benefit of a master plan, which would have provided forethought for each area of the site. From our work we concluded that:

1. there is no engineering or regulatory reason a community center cannot be located on the Ballfield Road Campus;
2. there is no discernible need for a second entrance to the Campus, nor does there appear to be an acceptable location for a second entrance;
3. there is strong support for the creation of a Campus for the future, with additional athletic fields, appropriate educational spaces, and a community center, all of which are intended to support learning, recreation, and community for residents of the Town and visitors to the Campus.

The answers to the first theme of the CMPC charge - the Campus capacity questions, required the exploration of more “scientific” and data driven issues relating to the Campus’ septic system, driveways, parking areas and internal roadway layout, wetlands and zoning limitations. Previous studies and committees concluded that the school building needs considerable upgrades or replacement in order to provide the desired educational environment for Lincoln’s students. Added to this is the previously acknowledged failings of the Pods, which may have some value for swing space during school construction, but have exceeded their useful life. The consultant team confirmed that there is no need for a second vehicle entrance, nor is there currently a suitable location for one, if one were needed. The consultant team also confirmed that there is adequate flexibility with the on-site septic systems and public utilities, answering another of the fundamental questions regarding the potential future utilization of the Campus.

In summary, the information contained within this report will demonstrate we have been able to answer the capacity question in the affirmative. The existing Campus infrastructure is capable, subject to some fairly modest investment, of supporting the addition of a community center and related uses at the Hartwell Complex should it be the will of the voters to do so.

Working from the intelligence gathered in the project's first steps, the CMPC hosted public engagement forums and clearly saw several consistent threads in the feedback received. Specifically, the public has a strong desire to:

1. create educationally appropriate environments;
2. enhance the community aspects of the Campus;
3. improve pedestrian and vehicle interaction;
4. provide additional athletic fields, and;
5. continue, if not improve, the relationship between the buildings and the fields, woods, and streams so integral to the atmosphere and character of the Campus.

With respect to the second theme of the Charge, the need to think about how to make the most efficient use of the land, we’ve offered three notional building and site planning concepts to help the Town wrestle with the trade-offs inherent in our options for siting buildings, and for addressing other Town needs and desires that were expressed during our various forums. Together, the three notional possibilities allow us to imagine how the Campus might look and function with buildings and facilities arranged in different combinations ranging from an approach which preserves the largest area for building footprints, to one in which the building footprints are slightly smaller than what is now existing for the schools, to one that most closely balance open space and building footprint.

By intention, our report steers away from conclusions about a preferred way to view the Campus and instead attempts to frame possibilities and their respective advantages and disadvantages, and the challenges and opportunities each presents.

This portion of the planning process was perhaps the most challenging. The CMPC was not charged with designing, nor even planning, any building. The charge was to establish those parameters through which the campus could transform into the center of a Lincoln of the next century – a community that respects and embraces its past as much as it relishes the challenges, aesthetics, and realities of the future. The examples that were developed and presented within this master planning report acknowledge that there are limitations and trade-offs to any transformation, be they regulatory, political, financial, or from some other force or pressure which may arise.

The work to develop examples for future projects concluded that the Hartwell area is the most suitable location for a community center. There are many possible configurations that could successfully incorporate the building and appurtenant construction into this area, utilizing the topography and nature of this portion of the campus to enhance the integration of a community center into the overall site. The CMPC concluded that construction of a community center or other work in the Hartwell area could likely be independent of the approach chosen for the school project. The primary place of overlap for the projects would be in any work on Ballfield Road, the center fields and temporary swing space that may be required to support school construction.

The examples contained in this report are considered to be workable, realistic options, but were not developed in a true design process and as such may have limitations which future committees will need to address.

The first example takes a conservative approach to resolving the future allocation of land to the various uses, with each building receiving generous space considerations. By leaving the potential school footprint as large as possible, a renovation of the existing building or new construction within the same footprint would be most easily accommodated. With this approach however, the potential for improvements in the flow of vehicular and pedestrian traffic around the schools is modest.

The second example explores the potential for a shorter and wider footprint for the school, which allows increased freedom for design of vehicular traffic and some modest increases in recreational spaces, possibly even accommodating one additional athletic field.

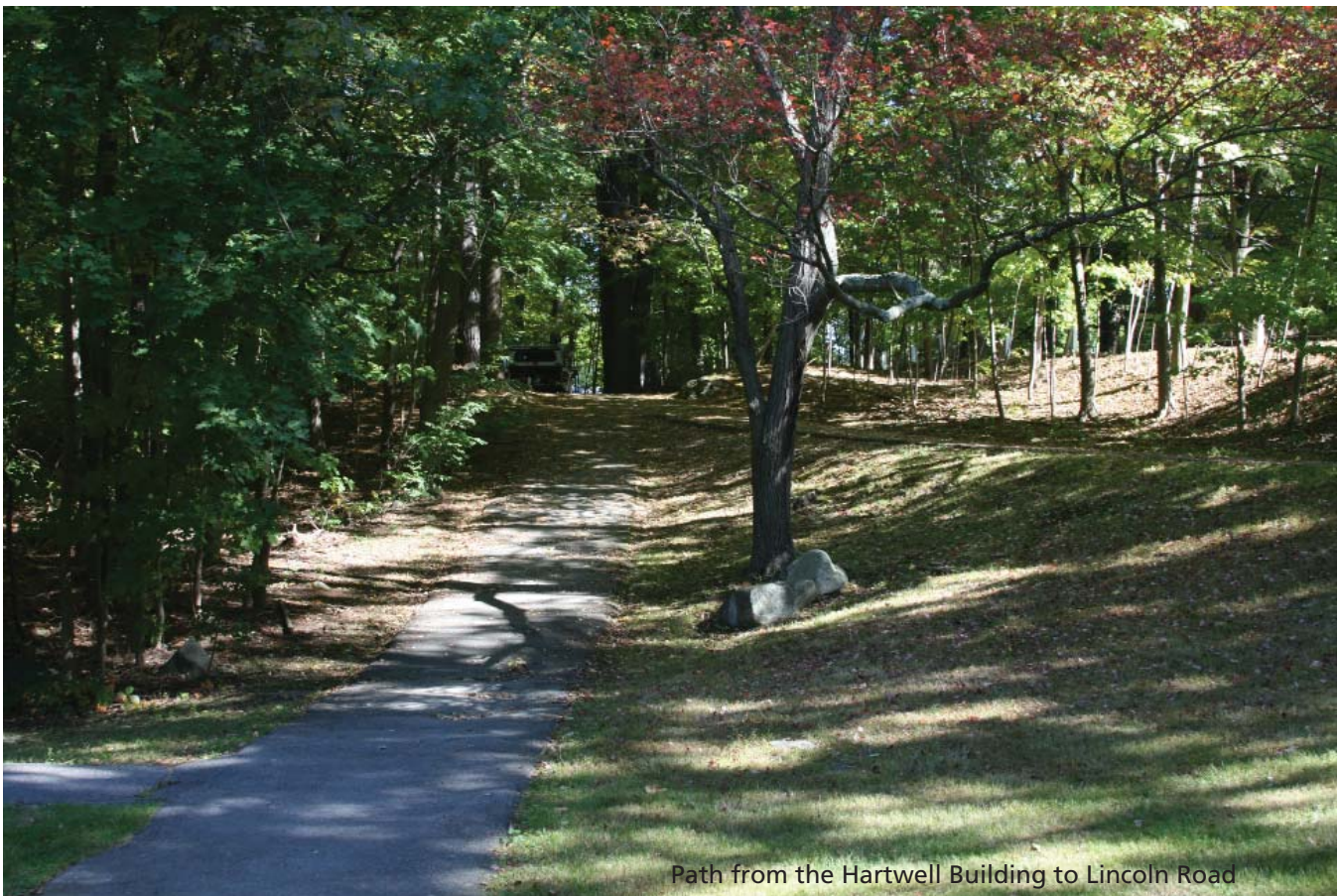
The third example shows the school footprint shorter and slightly wider still, with a substantial redesign of the vehicular travel routes resulting in a campus that is much more pedestrian and people-focused, with motor vehicles moved to the perimeter of the developed portions, foot path connections between the buildings, and possibly multiple additional athletic fields developed.

Clearly no meaningful comparison of trade-offs is possible without understanding cost implications. Although we were not charged with developing detailed building and site cost estimates, as it would be premature to do so until plans for the school building project and potential community center are further along, we felt that our analysis would be incomplete if it did not attempt to create at least a broad framework for beginning to understand costs.

The two largest campus planning cost elements are the cost of improving and/or reconstructing the school buildings, and the cost of building a new community center on the Hartwell Complex. For purposes of our cost models, we have simply incorporated the earlier work of the SBAC 2 and the Community Center Study Committee (CCSC).

Around these two principal cost drivers, we've attempted to provide a range of costs for other Campus planning improvements that were identified in our various public meetings. The cost of each of these examples will be related to such factors as the extent of site work, building renovations, and/or new building construction. The potential cost of each example, their trade-offs in functionality or suitability, and the projected life-cycle costs should all be prime considerations in any discussion of the Campus' future.

Parenthetically, the Massachusetts School Building Authority (MSBA) recently informed the Town that we would not be invited into the MSBA's current funding cycle. The School Committee and ultimately the Town voters will decide whether to continue to pursue a financial partnership with the Commonwealth, or whether instead to attempt to improve our school facilities on our own initiative and solely with Town resources. The Selectmen and ultimately the Town voters will determine when and how to advance the planning for a community center. In the meantime, and regardless of the course chosen, we hope that our report helps to inform these discussions.



Path from the Hartwell Building to Lincoln Road

SECTION 2 - UNDERSTANDING THE CURRENT CAMPUS

A master planning effort has many elements that must be fully explored so that a well-rounded understanding of potential routes can be developed. One aspect is the regulatory and physical aspects that impact or enable the site to accommodate the desired uses.

This Section contains findings and conclusions derived from site observations, research, and engineering analysis of the Campus as it currently exists. The objective is to answer several questions that have been raised relative to possible limitations on use and to provide information relevant to the discussion in later Sections about possible routes toward a redesigned Campus.

Photo credit: Philip Greenspun

An aerial photograph of a campus with various buildings, parking lots, and sports fields. The image is semi-transparent, allowing a table of contents to be overlaid on it. The table of contents is in red text and lists various sections and their corresponding page numbers.

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INTRODUCTION

The Ballfield Road Campus has evolved, almost continuously, from its start as a baseball field to the latest iteration enjoyed by so many from within and outside of the Town of Lincoln. Through the many changes that have taken place there have been some upgrades that have withstood the test of time and others that will need to be addressed to allow the Campus to accommodate the demands of future uses and regulations. As now configured, the Campus is constrained through regulatory controls, has limitations related to vehicular and pedestrian traffic, and will need attention given to the utilities that support the operation of the Campus

GENERAL CONFIGURATION

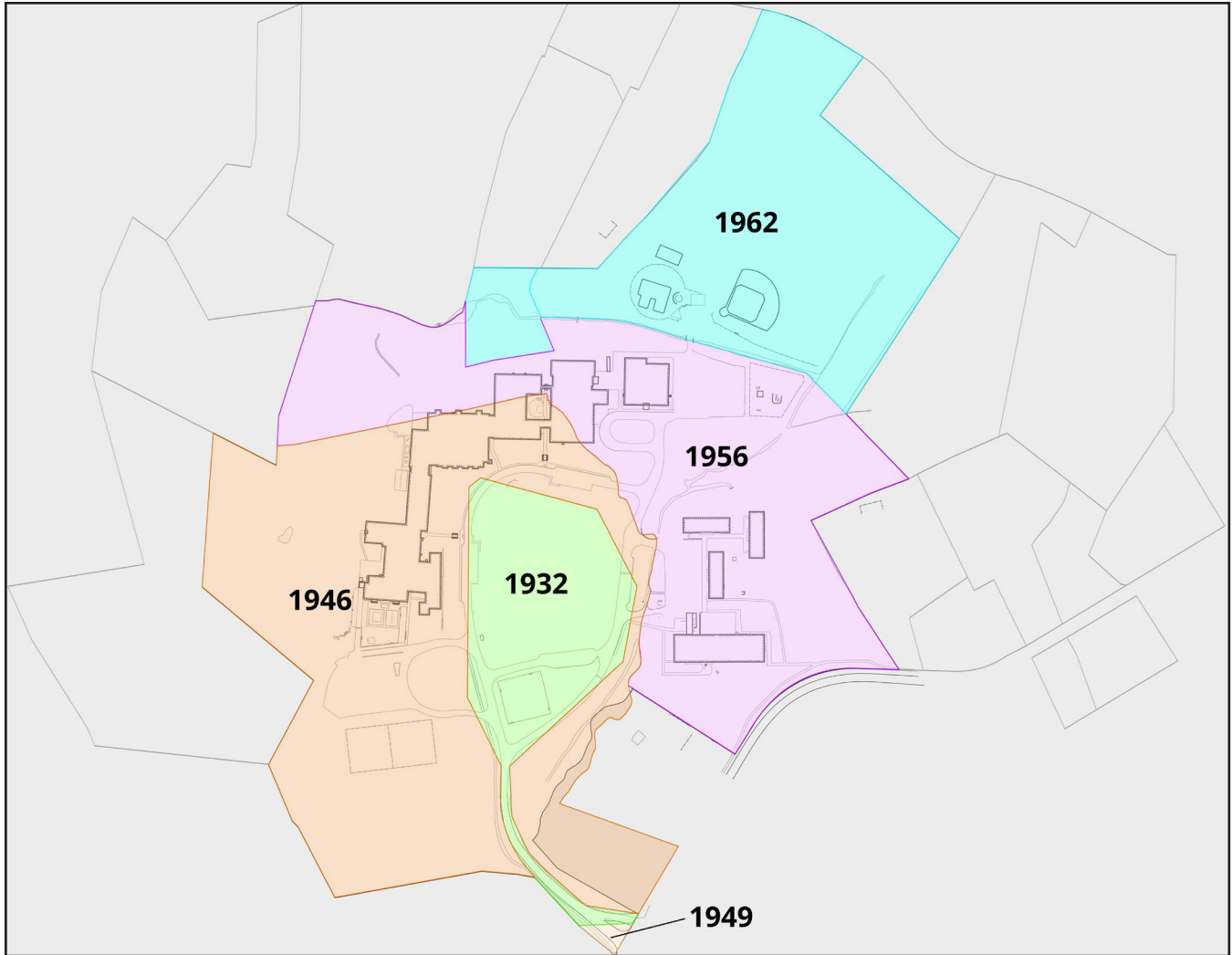
The Ballfield Road Campus consists of land acquired through acquisitions or gifts in four instances between 1932 and 1962. The Campus is currently comprised of approximately 71.5 acres of predominantly level land.

The site is divided by wetland and streams, effectively creating a main portion with the school and center field, an eastern portion with the Hartwell Building and Pods, and the northern area with the Codman Pool and fields. Of the 71.5 acres, roughly 77%, or about 55 acres, is developed or disturbed land; the remainder is wooded, wetland, or streams.

About 16 acres of the Campus is north of the stream, with frontage on Sandy Pond Road. This is the location of the Codman Pool and fields, the picnic grove, and open space. This area is bordered on the south by wetland and a stream, and there is a wet area along the northern edge as well. There is no formal vehicular access from Sandy Pond Road, but there are arrangements for emergency vehicle access. Pedestrians and bicyclists can access the Campus from Sandy Pond Road via a walking path. A high pressure natural gas transmission line traverses this area, which effectively restricts further development within this area.

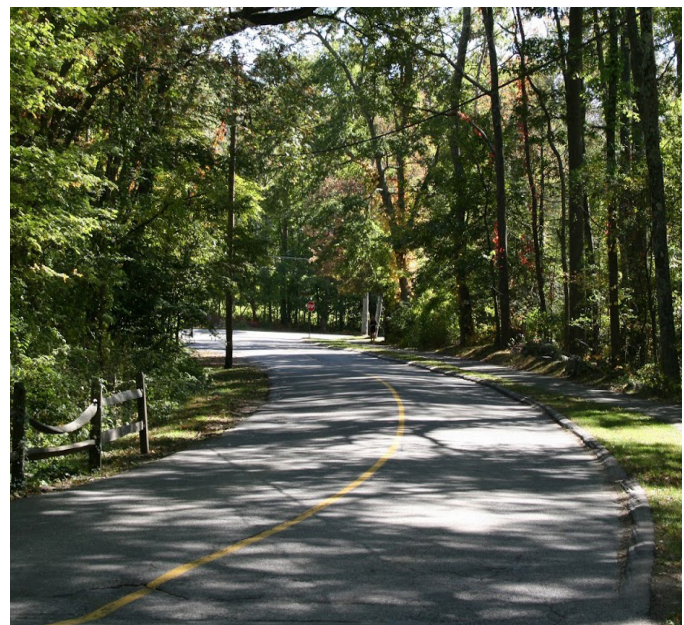
East of Ballfield Road and the stream is an area of approximately 15 acres. This area is bordered by the stream and Ballfield road to the west, Lincoln Road on the south, and privately held properties to the eastern border. This is the location of the Hartwell Building and the Pods. One of two main electrical supply lines crosses the eastern side of this area, passing from Lincoln Road to the parking lot near the Reed Gym. This is an overhead line which, as currently configured, limits the potential for further development of the eastern portions of this area.





The entry portion of Ballfield Rd. is about one half acre in size. It is the only established entrance to the Campus and provides all normal vehicular and most pedestrian access to the site. The entry road is essentially unchanged from the original configuration, having had only one significant modification in the late 1940's / early 1950's when the intersection of Ballfield Road and Lincoln Road was rebuilt to the current configuration.

The remaining 40 acres comprises the main portion of the Campus, including the center fields, the school buildings, tennis courts, and wooded areas. This is oldest portion of the Campus and dates to the original 1930's gift of land for a baseball field.



ACTIVITIES BY AREA

The Campus serves as the focal point for much of the Town's social, recreational, and sports culture. Some of these activities are accommodated through purpose-built facilities, while others utilize the open space of the Campus for their needs. Each activity or function, however, places unique demands upon the Campus.

In the broadest way, the Campus can be seen as three distinct areas - the center field/school, Codman Fields, and the Hartwell area. Each area of the Campus has unique attributes, and within each area are opportunities to learn, play, and relax. Travel between the different areas is done by foot, bicycle, or car, and it is the inter-connectivity, or lack thereof, that helps the areas to remain somewhat independent.



CENTER FIELD / SCHOOL AREA

The center field and school area comprise the largest portion of the Campus. Contained within this area are the tennis courts, most of the recreation fields, the school garden, the buildings for the K - 8 programs, and the majority of the parking.

It is this combination of uses that makes the largest contribution to the character of the Campus. It is not only the physical attributes of this area, but also the actual activities and openness in functionality of this section that make the Campus so special. In many ways like a private school campus, in other ways like a village green, but in operation, a little of both.

On a typical day there will be people using the tennis courts, walking laps of the Campus, and bird watching while school is in session and the work of the District administrative offices is conducted.

The tennis courts were established over three phases and feature extremely well founded clay surfaces. Unusual for public courts, the clay is well maintained and valued as a playing surface not every tennis player can readily access. Properly oriented, well fenced, with parking nearby and restroom facilities available, the tennis courts provide another uncommon asset for the Town.



The opportunity to provide a wide range of educational experiences is well utilized on the Campus. At the periphery of this center area the schools have established a school garden. Located to the west of the Smith School, the garden is one of many outdoor learning areas which teachers can integrate into the curriculum.



The school buildings - Smith, Brooks, Library Link, and Reed Gym, provide all of the programmatic space for the K - 8 population. They also are important components of the community life of Lincoln. The auditorium hosts the State of the Town meeting, the annual Town Meeting, theater productions, and other civic activities. The Reed Gym and the Smith gym provide space for public events, voting, and recreation.



There are a number of recreational / athletic fields located to the west of the Smith School, providing space for T-ball, baseball, and soccer. These fields have a very high rate of use from the schools, with the soccer field hosting organized non-school play as well.

The center fields provide the visual, physical, and activity nexus of the Campus. The fields are scheduled for a relatively high level of play by both school and recreational leagues. In addition to the athletic play, the center fields are the historical connection to the origin of the Campus.

The center field and school building area are the setting for many activities and thus are the areas many residents refer to when discussing the Campus. The easy accessibility, wealth of recreational and sports opportunities, and the public functions of the buildings all contribute to the importance of this area to the public's perception of the Ballfield Road Campus.

HARTWELL AREA

This area, located to the east of the center fields, is in many ways a self-contained portion of the Campus. Originally built to provide space for the Town's student population, the buildings now house the Magic Garden and Lincoln Schools Pre - K programming, District Administrative offices, and Lincoln Public School operational needs such as facilities and maintenance. In addition to these programs, the Town's Parks & Recreation offices are located in this area, as is the Lincoln Extended day After school Program (LEAP). Some of the Parks and Recreation and Council on Aging programs as well as community organizations use space in the Pods.



There are a number of outdoor play areas in the Hartwell area, and these provide structured and unstructured play opportunities for the preschool and after school programs.

Encompassing a parking lot with 48 spaces, the Hartwell area frequently hosts professionals from both school campuses for continuing education opportunities offered by the District. These sessions typically take place in the Hartwell building and the parking requirements often exceed what is available within the Hartwell lot and the immediate vicinity. Without a clear connection to the parking lot east of the Reed Gym, where there are almost always available parking spaces, visitors often park in non-designated areas.

CODMAN POOL AREA

The Codman Pool and the fields in this area have been a seasonal attraction since the opening of the pool in the mid-1970's. The pool provides a place for supervised swimming and play through the summer months and sees a steady stream of users throughout the season.

This area also contains a regulation Little League size field - also used for softball, which overlaps with an 8 v 8 soccer field. The fields each host a considerable number of organized games throughout their respective seasons. The overlap of the outfield with the soccer field increases the stress on the turf, eliminates concurrent play, and makes consecutive use difficult.



There are opportunities to play beach volleyball, bird watch, hike, or simply relax, all within the area around the Codman Pool. The fields are also the location for various Town events including the 4th of July celebrations, concerts, and craft fairs.

Located to the southwest of the pool is a picnic grove. This contains a cooking fireplace, benches and tables. Tastefully designed and well maintained, this feature does not appear to be as well utilized as it has been in the past. Indications from those who offered an opinion is that the completion of the Library Link building had the effect of cutting the picnic grove off from the Campus due to the elimination of a walking path that connected the center field to the grove.



It is understood that this grove is a memorial area dedicated to the memory of three Lincoln youth who lost their lives in a car accident in 1980.

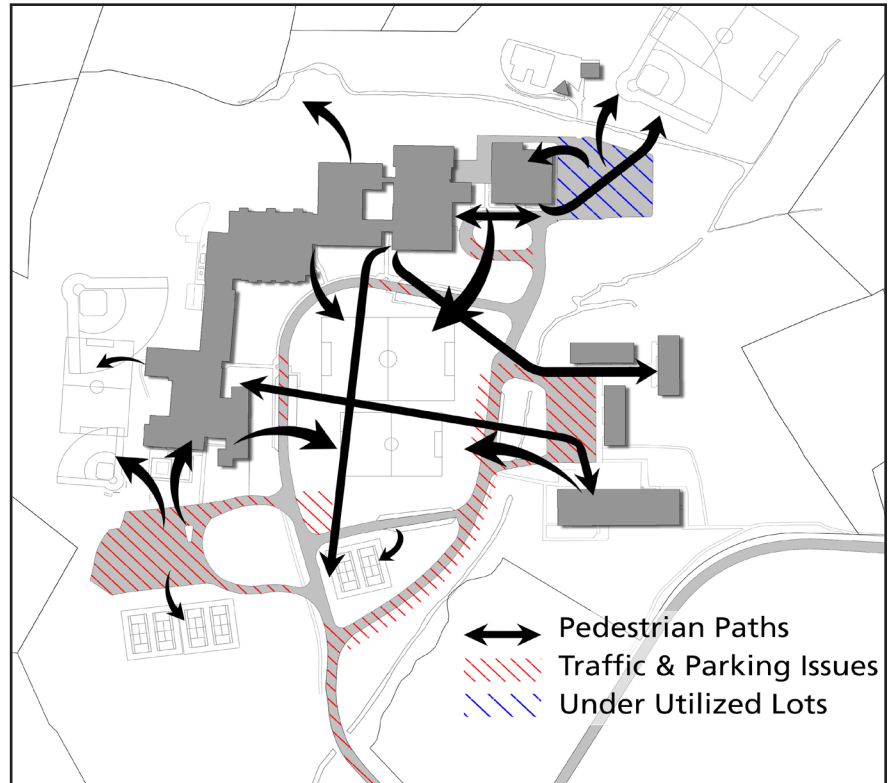
The location of the Codman Pool and the other nearby features is perhaps its biggest advantage, as well as its biggest disadvantage. The area is sometimes likened to an appendix of the Campus as a whole, difficult to navigate and not easily accessed by the entry of the Campus. Looked at another way, however, this area provides a retreat from the other parts of the Campus, offers functions not available elsewhere, and can be accessed by foot from Sandy Pond Road, making it the only other access point to the Campus.



INTERACTIONS

The Ballfield Road Campus serves many functions for the Town and those who use it have a feeling of comfort and safety. This is due as much to the configuration of the Campus as it is to any specific feature. The configuration of the Campus also leads people to parking where they may find it convenient to do so, pedestrians to walk where they desire without regard to sidewalks or crosswalks, and for deliveries and service vehicles to park or off-load where they find it to be most expedient.

The map illustrates the observations made by the project team through our site visits. The arrows show the predominant walking paths used by students, visitors, and residents. There is a noticeable lack of adherence to the formal walkways and sidewalks. A general disregard for designated crosswalks was observed as well. The most likely reason for this is that the existing sidewalks are relatively narrow, do not connect the main areas of the Campus in a logical manner, and in many cases are incomplete.



Parking across the Campus is in many ways as unstructured as the pedestrian network, as convenience often trumps intended use. Many visitors find it to be most convenient, either for pick up/drop off, to avoid being stuck in traffic, or simply being closer to the building or field they need to visit and as such often park on the grass.

The delivery of goods and materials to the Campus is comparatively well controlled. Many of the deliveries take place outside of the main hours or busy times of the Campus, which helps to reduce potential conflicts. However, the facilities each lack any real accommodation for loading or unloading, thus some drivers are opportunistic in their selection of loading zones.



SITE ENGINEERING OVERVIEW AND CONCLUSIONS

In order to properly assess the ability of Campus to absorb a community center there are a number of site constraints and parameters to consider. These constraints and parameters could be loosely termed to be "engineering exercises," meaning developing the potential solutions for each constraint is not overly complicated. The complication can often come in gaining consensus in identifying the acceptable course of action.

These site constraints include roads and parking lots, sidewalks, utilities, regulatory requirements, and the buildings on Campus. The current extent and conditions of each of these considerations was studied in order to develop possible courses of action. There is an overview of each of the areas of study to begin, and a more in-depth exploration throughout the rest of this Section.

Roads, driveways, and parking lots

Roads on Campus show design dating from the middle of the 20th century, notably the average width, which is narrower than typical current standards. This should be seen as a positive, as it contributes greatly to the character and feel of the Campus. The narrow entrance leading from Lincoln Road naturally prompts drivers to slow down, thus contributing to the park like atmosphere.

However, all paved surfaces show signs of age and wear. It can be conservatively estimated that all pavement will need major repair or replacement in the next three to seven years. The opportunity to address the paving needs in concert with building construction projects is one which should be part of future planning efforts. Construction vehicles will impart significant wear on the roads and a paving plan that coordinates with construction will provide opportunities for cost sharing as well as assuring the least amount of damage possible to newly paved roads.

Sidewalks and footpaths

The initial pedestrian entrances to Campus from Lincoln Road provide rather dramatic and picturesque experiences. Unfortunately, due to an incomplete network of sidewalks and footpaths on Campus, that experience is short lived. To make matters worse, the pedestrian infrastructure that does exist is designed for minimal use and does not meet current ADA guidelines. The opportunity for improvement is great in this category.

Utilities - Water main

The current water main that serves Campus is very likely sized correctly to effectively continue to serve the projected uses in the future. There are options for looping the service that should be explored and evaluated to maximize efficiency and reliability.

Utilities - Electric service

The campus currently receives electrical service through two entry points, both from Lincoln

Road. The added use of a Community Center does not present a significant additional load for the current service. Some possible limitations exist pertaining to the supply lines being overhead wires.

Utilities - Septic system

The largest of the three separate septic systems is currently operated under a variance from the Massachusetts Department of Environmental Protection (MassDEP). Due to the size of the Campus wide system, any modifications to the system will require coordination with MassDEP.

It may be possible to reuse the septic system that is currently serving the Pods as the system for a community center. The suitability of the system will need to be determined as part of a community center design effort. It is reasonable to expect that the Pods will need to be demolished, or at least disconnected from the septic system, prior to construction of a community center.

Wetlands, buffers, and riverfront setbacks

The Campus contains significant acreage protected by conservation regulations. The wetland buffers prohibit development in the protected areas, however pre-existing development is allowed to remain. The riverfront setback regulates the amount of degraded land within 200 feet of a river or stream. The amount of degraded area on the Campus is already beyond the prescribed limit, however that offers future projects some flexibility in complying with the regulation.

Traffic

Traffic on the Campus may best be termed as "typical for a PK - 8 school campus" with some minor increases due to concurrent non-school activities on Campus. The level of service experienced on Ballfield Road does not rise to level of concern, as the period of highest congestion is fairly limited and predictably related to the begin and end of the school day. The projected traffic volume due to a community center is not expected to add enough vehicles to cause major concern.

Parking

In total the Campus has significant parking capacity. Unfortunately, Campus usage patterns don't coincide completely with parking locations or driver preferences. The Hartwell area is of particular concern, given the possible addition of a Community Center sometime in the future.

Buildings

There have been many studies documenting the conditions and needs for schools and other buildings on Campus. Nothing has emerged in this study that greatly alters those conditions or the recommendations found in the previous studies.

ROADS, DRIVEWAYS, AND PARKING LOTS

The roads and driveways are essentially as they were configured at the completion of the 1994 construction of the Link Library building. There are approximately 4,380 lineal feet of paved roads and drives, or about 0.83 of a mile total. The total paved area for roads and drives is approximately 114,170 square feet, roughly 2.62 acres. This includes areas that are adjacent to traveled lanes but not designated for parking, as well as areas designated for loading, unloading, drop-off or pick-up.

The average roadway width is approximately 20 feet. This narrowness contributes directly to the park-like feeling of the roads as well as to the low average travel speeds observed by the Lincoln Police Department and consultant team. There are a number of low-height speed bumps on the Campus, but these are of a broader width and lower height than standard and perhaps serve to reinforce the idea that the driver is on a pedestrian-focused campus more so than to reduce travel speeds.



The roads, drives, and parking areas all appear to be of minimal standard of construction. It is unknown how much base material may be under the pavement, but in areas of deterioration it is evident that the binder and wearing courses of pavement are comparatively thin when contrasted to typical public road construction.



This has contributed to the deterioration of the pavement in both roadways and parking lots. Near-term (1 – 3 years) repairs are needed at the entry to the Hartwell lot from Ballfield Road, the area north of the Hartwell exit to the bus loop entry point, and the Ballfield Road / Smith lot intersection. Mid-term (3 – 7 years) repairs will be needed to virtually all of the paved areas on Campus. These repairs may range from scarifying and replacing the wearing course, which may not be feasible, to complete removal and replacement of binder and wearing courses and any sub-base that is inadequate.



There is approximately 1,529 lineal feet of curbing throughout the Campus, compared to 4,380 lineal feet of road. The majority of the curbing on the Campus is concrete, with asphalt curbing in very limited quantities. Concrete curbing is in place along the loop in front of the schools, but the majority of the roadways are not bordered by curbing. This contributes to a rural feel and allows for sheet flow of storm-water runoff, but also encourages convenience parking by drivers who can either not find a parking space or prefer to park closer to their destination, regardless of the availability of designated spots. Many areas of the curbing are broken, out of alignment, or uneven, which degrades both the functionality of the curbing and the character of the Campus.



The lack of curbing and the free-form parking has resulted in erosion and degradation of the grass shoulders along the roadways in many locations. The addition of new curbing would have impacts to the current storm-water flow paths and would likely require additional catch basins, manholes, and piping to deal with the water being “trapped” on the pavement rather than allowing it to sheet flow into the wetlands. If this was a brand new site we would not be allowed to sheet flow storm-water directly from the pavement to the wetlands, as is currently happening, as it’s an untreated flow.

The parking areas are dispersed across the Campus, contributing to the open feeling of the Campus and eliminating expansive paved areas.

There are currently 279 designated parking spots on paved surface lots. The paved area totals about 126,976 square feet, circa 2.9 acres. The spaces are clearly marked and of adequate width and depth to facilitate safe and orderly parking.

The location, size, and use patterns of each of the parking lots are explored more fully later in this Section. It is apparent, however, that there is a consistent tendency toward parking in non-designated spaces across the Campus, which contributes to traffic and pedestrian safety and flow concerns. Acknowledging and addressing this tendency in future planning efforts will be a critical element in the success of the outcome of those undertakings.



Conclusion

The paved surfaces throughout the Campus are deteriorating and in need of replacement. The existing curbing is likewise in need of replacement. Expansion of the curbing to places currently without should be carefully reviewed as such expansion will change the character of the Campus.

Repaving should not lead to widening of the roadways without consideration of the potential impact upon vehicle speed and pedestrian safety.

SIDEWALKS AND FOOTPATHS

There are a number of sidewalks and footpaths on the Campus. By connection of the walkways along Lincoln Road, there is a paved walkway from the Reed Gym to the shopping area near the train tracks, allowing students and residents to travel from the Campus to the Town by foot and bike.

Walkways on site total about 11,000 square feet in area. Unfortunately, there are virtually no improved walkways or footpaths along the desired path – the route that people will naturally follow from place to place, between the buildings on the Campus. On-site observations, as detailed later in this report, showed a considerable amount of foot traffic bisecting the center fields, crossing roadways regardless of crosswalks, and traversing from vehicle drop-off points to the entry ways of buildings.

There are many portions of sidewalk that do not appear to be ADA compliant; in and around the Hartwell area there are cross slopes and grades that are too steep to be compliant as an accessible route. Similarly, at the Brooks and Smith Schools there are some grades that are too steep, no tactile warning strips, incomplete accessible paths, and breaks in the paving or surfaces. Across the Campus there are areas of frost heaves, tree root bulges, and areas where the turf has sunk below the walkway surface or where the walkway itself has settled below the top of the adjacent curbing. Each of these instances creates a tripping hazard or renders the walkway non-compliant with ADA or MAAB regulations.



There are three more or less formally delineated footpaths on Campus and many casual or less well-defined pathways. The three delineated paths each cross a stream via a bridge or culvert. The bridge from the Reed Gym parking area to the Codman Pool appears to be in good condition, with well-defined walkways leading to and from the bridge. The bridge on the path from the Reed Gym parking lot to the Pods is in need of attention, with structural repairs possibly required. Finally, the culvert that takes the stream under the path from the Reed Gym playground area to the Pods has separated and is in need of attention.



Conclusion

The existing sidewalks and paths provide an incomplete network of pedestrian paths around the Campus. The majority of the sidewalks are too narrow for the number of people on the Campus and there are many points of use that are not connected by sidewalks.

Attention should be given to those aspects of the pedestrian paths that are not ADA or MAAB compliant.

Careful consideration should be given to design and construction of walkways either as part of future building projects or as independent undertakings to provide an enhanced walking and learning experience.



UTILITIES

Water Main

The Campus is served by an 8" water main, which is a typical size for a campus of this land area and uses. This should be adequate for the needs of a community center as well, provided there are no off-site limitations to volume or pressure.

Consideration should be given to looping the water mains during future construction projects. The Campus could be looped in a number of ways; connecting from Sandy Pond Road through to Lincoln Road might help to balance pressure and flow and could provide a means of isolating the Campus from water outages in the event of a main line break. The main service to the schools should loop in a manner that allows two means of feeding the school building while isolating this facility from the rest of the Campus if needed.

Similarly, if a community center is constructed in the area of the Hartwell Building, looping of the water feed to this area should be considered to allow isolation and continued service of the buildings when and if necessary. Finally, though a loop would be preferable for water service to the Codman Pool, the shortest possible stub from the loop that serves the school, sized to provide a fire connection as well as to facilitate purging and flushing of the stub as necessary, might be an acceptable alternative.

Electrical Service

The Campus is served by the public electrical service provider. Capacity appears to be adequate both on Campus and within the supply grid for the current Campus and for any expansion contemplated.

The Campus has two major service entry points. Both enter from Lincoln Road, which may limit the ability to maintain service in the event of a line breakage or similar catastrophic event. Both service lines are above grade and pass through heavily wooded areas. Consideration should be given to a second service entrance from Sandy Pond Road to allow a better chance of continued service in the event of a line breakage or similar event. Though costly, placing the main entry lines underground provides much better assurance against tree and vehicle damage to the lines, presents an image more appropriate to the nature of the Campus by removing the overhead wires and poles, and offers the chance to reclaim some area that is unusable now due to the overhead wires.



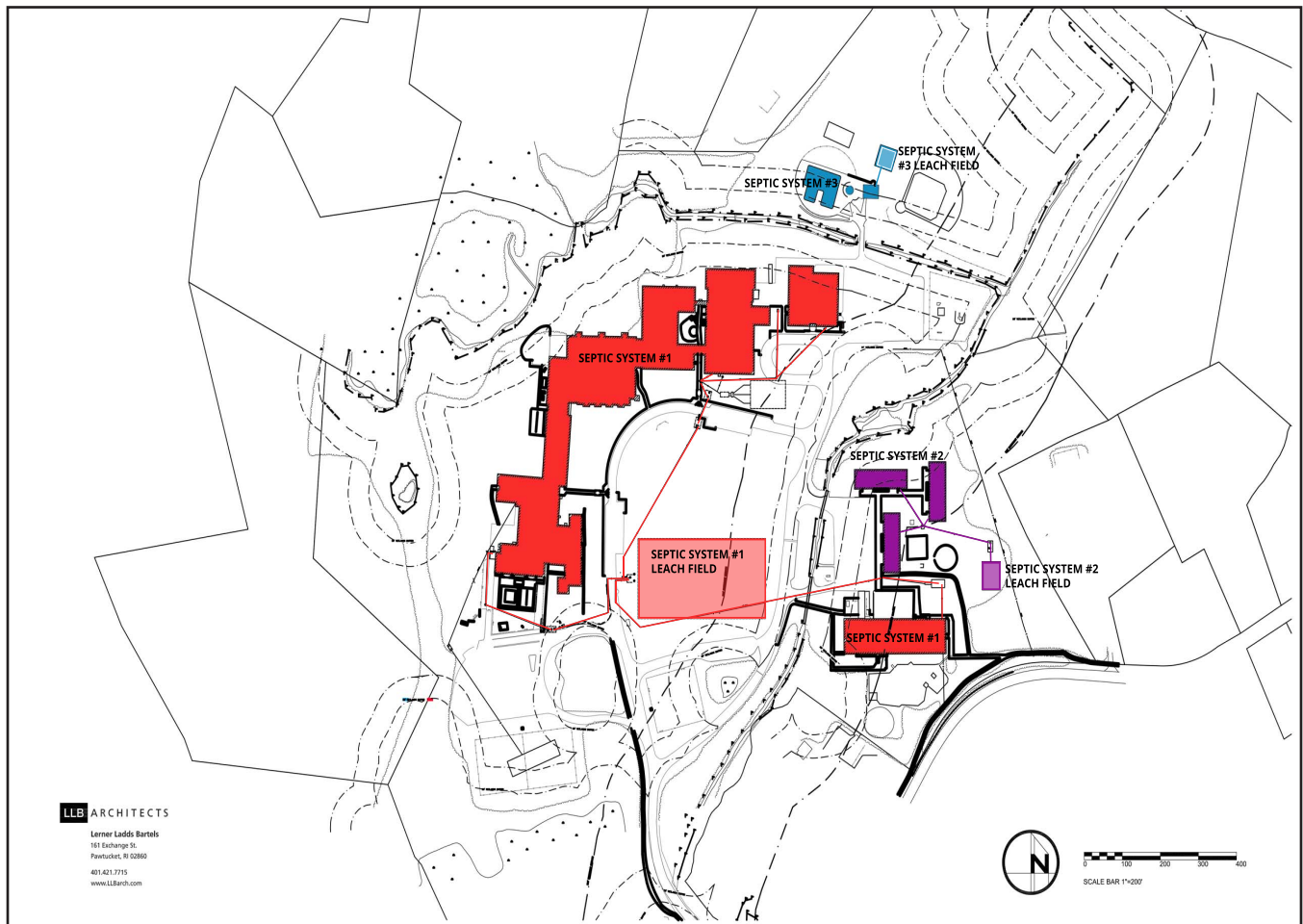
Septic System

There are three non-connected septic systems on the Campus.

The largest services the Hartwell Building along with the Brooks and Smith Schools. The distribution box is located at the southwest corner of the center fields, with the leaching field located beneath the southern portion of the center fields, the northern area of the center field being the designated replacement system leaching area for this system.

The second largest system services the Pods. The distribution box is located south of C Pod, with the leaching field located to the east-southeast of the distribution box. There is no known identified replacement leaching area for this system. This system may be able to serve as the starting point for a system to service a community center, if the Pods are demolished or otherwise disconnected from the system.

The third system on the Campus services the Codman Pool comfort station. This is a relatively small system designed for a limited use. The distribution box and leaching field are located north of the Codman Pool buildings.



There is currently a variance from the Massachusetts Department of Environmental Protection (MassDEP) for the Campus. The variance allowed the use of actual meter readings to calculate flow (instead of design flows), for the system servicing the schools and the Hartwell building. This variance allowed the actual daily water use to be used as the determining criteria in the sizing and suitability of the septic system. Under the variance, as filed in 2007, the large system is documented as having a flow of 7,856 gallons per day. The other two systems (servicing the Pods and Codman Pool) were reviewed using a design flow approach instead of actual flows.

There may be some uncertainty around which systems were officially granted the variance. It seems clear that the variance is only for the largest system, though the intent may have been for it to include both the largest system and the system servicing the Pods. This may be due to some plans which appear to show that these two systems were combined. Further research led to the conclusion that the three systems are independent of each other and all functioning as designed, at this time.

This results in a potential site load for all three systems of as low as 10,356 to as much as 13,236 gallons per day. Thus, per the MassDEP guidelines the Campus is regarded as a 'large' system, as the total flow exceeds 10,000 gallons per day. Under this MassDEP classification there are a number of considerations to keep in mind as the Campus is improved.

The first is that any modification to any of the systems will require MassDEP review and approval.

Secondly, the system serving the Pods is an older system, and a newer design may be more efficient in handling effluent. It remains to be established if the existing system can provide adequate flow for a community center, if that facility is intended to connect to this system. If the Pods are demolished there might be adequate capacity for a community center. Upgrading it, or installing a new system, is only in reference to reusing it somehow for the community center flow. That is if the Pods were demolished or otherwise disconnected, and only the community center would utilize the system. It should be noted that with no changes, i.e. the pods remain connected to this septic, there would be no reason to change the septic field as long as it continues to function properly.

Ultimately, the Campus qualifies as a "Large" system or systems serving a site, because flow exceeds 10,000 gallons per day. A MassDEP review will provide the Town with direction to assure that public health and safety are not compromised through the design or operation of the systems. All of the variables such as use patterns of the buildings, the presence of wetlands, drinking wells, and soil types will factor into the MassDEP's ultimate directions to the Town.

Planning for future Campus projects should be cognizant that the MassDEP must review and approve all septic design. It is possible MassDEP may require a groundwater discharge permit for an on-site "septic system", which is simply a large system, and typically has additional effluent treatment above and beyond smaller septic systems. There are many technologies and options available to provide additional treatment if required by

MassDEP, ranging from small package treatment plants to the addition of a series of trickling clarifiers. The design flows are anticipated to be just slightly over the 10,000 gallons per day limit. At this level any additional treatment is not anticipated to take up a significant area. In the case of the trickling clarifiers or similar treatment, these can be primarily located below grade and screened from view, without restricting the center field areas.

It is also worth bearing in mind that MassDEP does not have to require a groundwater discharge permit and treatment plant; it's down to the circumstances of the site and the discretion of the Mass DEP. It is important to the success of the future Campus projects, to the MassDEP application, and to the security of the groundwater resources, that the septic systems be fully researched, documented, and all options explored as the Town moves forward with any changes to the Campus.

Conclusion

The existing water system appears to be adequate to serve the current and potential uses, design of any buildings or improvements should consider looping of the water mains.

Moving the overhead power lines to an underground installation could remove some constraints on use of the site as well as providing increased stability and protection from outages.

The three existing septic systems provide coverage for all of the existing buildings. There are considerations that must be borne in mind as part of future building projects, including the potential of MassDEP requiring a discharge or treatment system, and the possibility that the system currently serving the Pods can adequately service a community center.



A view of the grade change in the Center Field due to the septic leaching field. This change in grade severely limits possible field orientations.

REGULATIONS AND REGULATED AREAS

Zoning

The zoning for the Campus, like most of Lincoln, is single-family residential. Pursuant to Massachusetts General Law, Chapter 40a, Section 3, as a non-profit educational entity, the school use requires only minimal adherence to local zoning requirements. A community center use, being new to the Campus, would likely require a Special Permit from the Lincoln Zoning Board of Appeals. The Planning Board would need to provide written advice to the Board of Appeals regarding this permit.

Given the wide public support for a community center, and the genuinely complementary aspect of its use for a school campus, this might be seen as a largely procedural requirement. After the necessary public hearings and full discussion, it appears likely that a favorable decision could be obtained.

Conservation Zones and Potential Expansion of the Campus

There are 15 land parcels that abut the Campus. Five of the 15 properties have been placed in conservation for perpetuity.

The Town owns one of those to the north of the Campus, locally known as The Muster Field, with historical significance from the Revolutionary War. In addition to historical importance, there is a permanent conservation deed on the property, and significant wetland and buffer coverage (>90% of site), therefore making it would be a poor candidate for Campus expansion.

Three other of the conservation properties are owned by the Lincoln Land Conservation Trust and are protected with deed restrictions. Each of these properties have significant wetland and buffer coverage, ranging from half of the site to 100%, thus making them poor candidates for Campus expansion.

The final property in conservation that borders the Campus to the west and is privately owned, parcel number 142 9 0. It has relatively little wetland buffer, is level, clear of trees and abuts an existing parking lot and play field, making it an obvious consideration for Campus expansion should the need arise.

In order to successfully acquire the property for Campus use, the owner would have to agree to sell or donate the land and the town would need to undertake the complex process of removing the conservation restriction at the State and Local level.

As the local administrator, the Conservation Commission is bound to act according to regulations set by the Mass Executive Office of Environmental Affairs (MassEOEA) regarding removing land from legal protection under Article 97 (conservation). Lincoln would need to prove there are exceptional circumstances requiring the removal of the conservation restrictions after finding “no feasible and substantially equivalent alternative exists.” Additionally, the goal of this policy is to ensure no net loss of Article 97 land, so Lincoln would be required to facilitate the replacement of the conserved land elsewhere in Town.



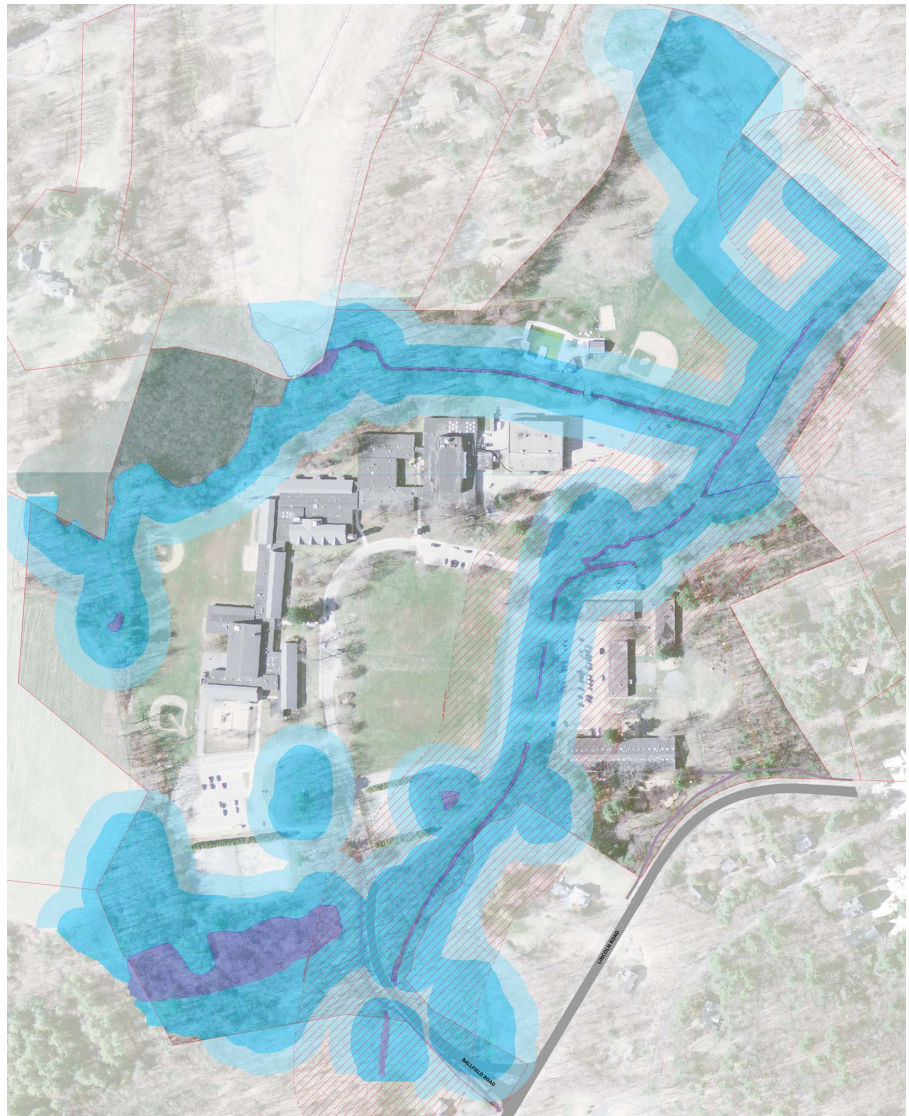
While the remaining 10 properties don't have conservation restrictions, they have other limitations (wetlands buffers, steep slopes, small acreage, etc.) sufficient to effectively eliminate most of them from strong consideration for Campus expansion.

Current Master Planning efforts remain focused on maximizing space on the current site, but when considering long-term needs, opportunities for expansion should not be ruled out entirely.

Wetlands and Buffers

Locally, the conservation commission administers the Wetlands Protection Act (the Act), overseen on the state level by the Department of Environmental Protection (MassDEP). The Act protects not only wetlands, and the public interests they serve, but other resource areas, such as land subject to flooding, the riverfront area and land under water bodies, waterways, salt ponds, fish runs, and the ocean. The Act regulates many types of work in resource areas, including vegetation removal, regrading, and construction of buildings, additions, and impervious areas, which entail work in a wetland resource area or within 100 feet of a wetland (the buffer zone).

In addition to the State Wetlands Protection Act, if required by the Lincoln Conservation Commission, the Lincoln Wetlands Protection Bylaw imposes a naturally vegetated buffer strip a minimum of 50 feet in width (100 feet in the case of riverfront). The 50 ft. buffer prohibits the construction of buildings, sheds, garages or other accessory structures, swimming pools, tennis courts, septic systems, installation of lawn, removal of trees or shrubs, placement of wood chips or bark mulch, dumping of leaves or lawn refuse, grading, removal of naturally occurring leaf litter and debris, and other landscaping activities which interfere with the naturally occurring vegetation of the area. There are however allowances made for lots buildings, and impervious areas in place prior to March 2003.



Riverfront Setbacks

The riverfront setback areas are also regulated through the Wetlands Protection Act, the Conservation Commission, and MassDEP. The riverfront area is the area of land between a river's or stream's mean annual high water line and a parallel line measured horizontally 200 ft. away, it may include or overlap other resource areas or their buffer zones, and includes culverts of less than 200 feet in length. The riverfront zone on the Campus is limited to a portion of the north-south running stream only. The west-east flowing stream apparently does not meet the necessary criteria to be classified as a riverfront zone.

State regulations limit degradation of sites within riverfront setback zones to 10% of the total riverfront zone located on the site. Currently there is approximately 26.9 acres of Campus area within the riverfront setback zone, resulting in a regulated limitation of 2.69 acres that can be degraded. As currently configured, approximately 4 acres of the riverfront setback zone is already degraded through impervious surfaces such as



pavement or buildings. It is important to note that virtually all of this existed before the riverfront setback zone was established, however.

In the interest of environmental protection, future projects on the Campus may look to remediate the overage of degraded area within the riverfront setback, however it must be noted that, by regulation, there is no requirement to reduce the total amount of impervious surface. This may provide opportunity for future projects to put in place a more ecologically sensitive built environment, while not reducing the total amount of degraded area within the riverfront setback. While future projects can't make the impervious area larger, it may be possible to redevelop the already degraded areas, or to swap areas, i.e. put in new impervious areas, but remove existing impervious to keep the total at 4 acres. This is an aspect that must be explored with the regulating body when the time comes to begin planning for a future project.

Conclusion

The Campus is subject to a number of regulatory and conservation considerations and constraints. However, each of these is well defined and understood and have a defined course of action if there is need or desire to seek a variance or other relief.

The opportunity to mitigate or reduce negative impacts from existing facilities may arise as part of future building projects and as such should be fully explored when possible.

Potential for expansion of the Campus through land acquisition appears to be fairly limited due to conservation agreements or other limiting legal arrangements. However, this is not to say that expansion of the Campus is not possible and the Town should keep options open moving forward.



TRAFFIC

One of the major concerns when considering a community center on the Lincoln Campus relates to vehicular traffic. Prevailing opinion has been that the traffic conditions on Lincoln Road, Ballfield Road, and on the Campus itself, are too congested to accommodate an additional facility.

After collecting traffic volumes, observing traffic conditions, and conducting operations analysis, the study team has determined that the intersection of Lincoln Road/Ballfield Road can accommodate the traffic volumes anticipated from a community center, with the caveat that proper attention be given to the scheduling of the center's programs. Scheduling of new programs should be developed so as to minimize the number of new vehicle trips exiting the Campus between 2:45 p.m. – 3:15 p.m. to avoid exacerbating queues on Ballfield Road during the short-lived school dismissal peak.

Ballfield Road and the other internal Campus roadways could be improved to better facilitate on-Campus circulation and maximize separation of traffic generated by the school and a community center. Circulation improvements to the Campus roadways should be a key design consideration during the planning of all future Campus building projects.

While an additional Campus driveway has been considered in the past, the current and projected future traffic volumes do not warrant the need for a second driveway.

The following sections describe the study area, data collection, intersection analysis, and trip generation associated with the addition of a community center.

Study Area

The traffic evaluation focused on conditions along Lincoln Road, Ballfield Road, and the key intersection of Lincoln Road/Ballfield Road, which is the only public access/egress driveway for the Campus.

As classified by the Massachusetts Department of Transportation (MassDOT), Lincoln Road is a rural major collector roadway. Lincoln Road connects from Route 117 (South Great Road) to the five corners intersection at Lincoln Road/Trapelo Road/Bedford Road/Sandy Pond Road/Weston Road. The Bedford Road corridor connects further north to Route 2. All traffic traveling to and from the Campus must use Lincoln Road to reach Ballfield Road. Within the study area, Lincoln Road has one travel lane per direction and a posted speed limit of 20 mph. Recent Lincoln Road speed observations show, however, that the average speed is 24 mph and the 85th percentile speed is 38 mph. In other words, 85% of drivers on Lincoln Road travel at or below 38 mph. It is worth noting that the observed 85th percentile speed is often used as the designated speed limit.

Ballfield Road is the only public driveway for the Campus. An emergency vehicle agreement allows access from Sandy Pond Road to the Campus, but this is not available for operational or public use.

Lincoln Road/Ballfield Road is an unsignalized three-legged intersection, where the Ballfield Road approach is controlled by a stop sign. Lincoln Road traffic does not stop, but the northbound through vehicles must often slow down while a downstream vehicle waits to turn left onto Ballfield Road. On the southbound Lincoln Road approach, a slip lane is provided for right turns to facilitate bus and delivery truck maneuvers onto Ballfield Road.

On the Campus, Ballfield Road diverges to serve the various parking areas and facilities. A portion of the roadway is one-way and loops around the center field. The Campus roadway configuration has evolved through the years and does not provide maximum separation between pedestrians and vehicles. Some well-used pedestrian pathways cannot be seen clearly by approaching drivers. Many drivers park where it is convenient, rather than in designated parking spots. This haphazard parking activity can block sight lines between pedestrians and moving vehicles. The staging of school buses in the afternoon near the Hartwell parking lot effectively reduces Ballfield Road to a single lane. When buses are staged here, vehicles entering the Campus must travel into the opposing lane to pass the buses, causing potential conflicts with on-coming vehicles.



Data Collection and Observations

CMPC members and the study team obtained relevant historical traffic data from the Town and collected new data during August, September, and October 2015. These observations included:

Automatic traffic recorder (ATR) counts

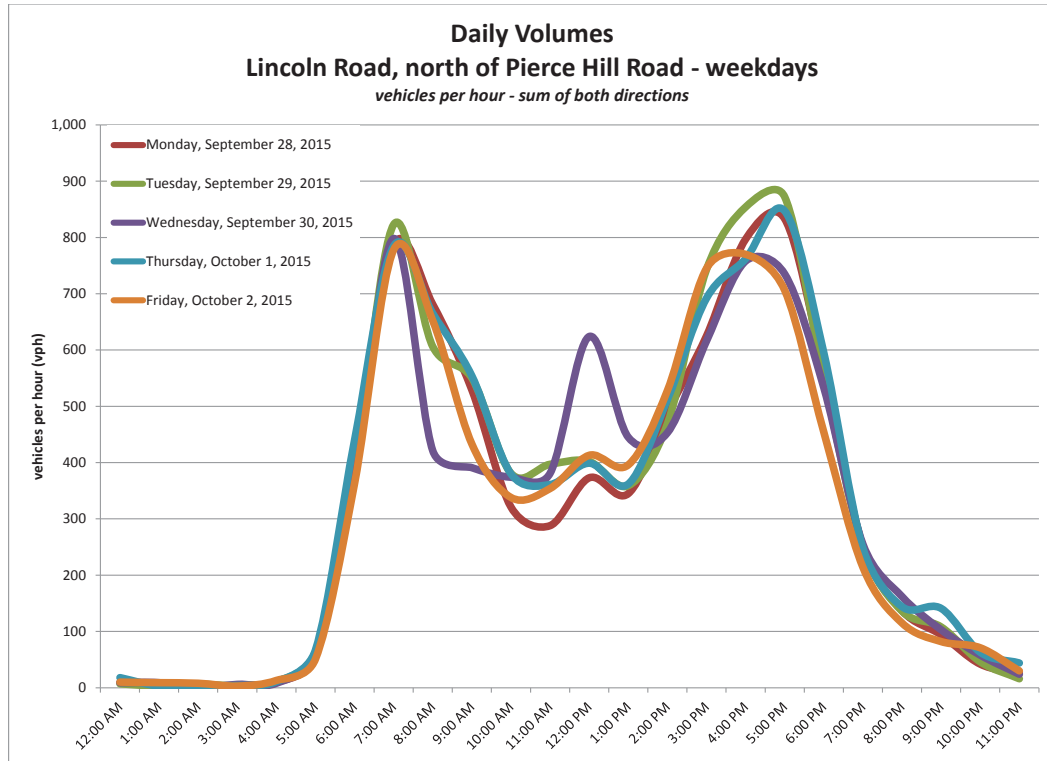
An ATR is a device that continuously records the passage and speed of vehicles on a roadway for a given period of time. Traffic data is typically collected over multiple days and summarized by direction and hour of the day.

The Lincoln Police assisted the study team by placing their ATR devices in three locations simultaneously, including Lincoln Road north of Pierce Hill Road, Lincoln Road south of Tower Road, and Ballfield Road west of Lincoln Road. The Ballfield Road ATR was placed midway between Lincoln Road and the point where Ballfield Road diverges toward the Hartwell building. The ATR counts provided insight into the daily patterns of general traffic along Lincoln Road and Campus specific traffic on Ballfield Road.

ATR counts were conducted in August and September 2015, for seven consecutive days during each month. The August counts were conducted during the first week of the month when the Parks and Recreation Department's summer camp programs were in session. The September counts were conducted during the last week of the month after 1) school activity had settled into a normal routine and 2) the fall programs offered by the Parks and Recreations Department (PRD) had commenced.

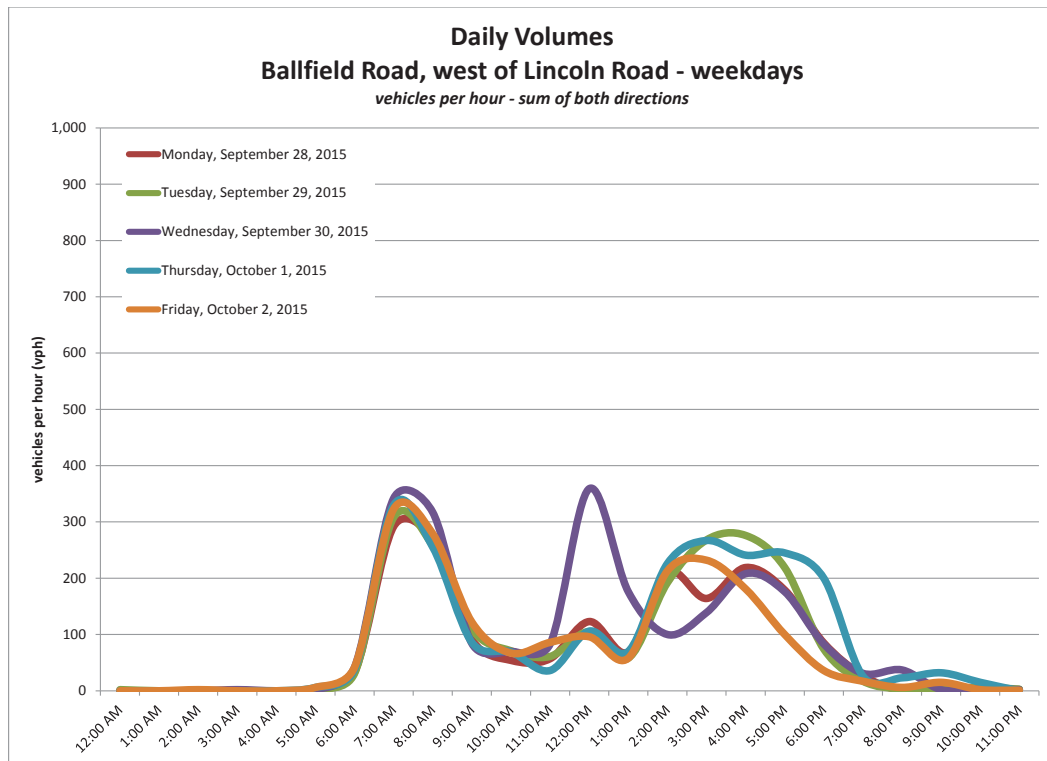
Collectively, the ATR data allowed the team to assess vehicular volumes and travel patterns near and on the Campus. Based on September 2015 data, Lincoln Road near Pierce Hill Road carries about 7,800 vehicles per weekday (both directions) and about 3,800 vehicles per weekend day. Ballfield Road carries about 2,100 vehicles per weekday, about 900 vehicles on a Saturday, and about 300 vehicles on a Sunday.

The charts on the following page show the vehicles per hour on weekdays travelling Lincoln Road and on Ballfield Road. During the morning volumes are fairly consistent day to day. In the afternoon traffic volumes vary more, due to different after-school and Campus activities. The early school dismissal time on Wednesdays is clearly seen on both graphs.



Source: Howard Stein Hudson
10/6/2015

4



Source: Howard Stein Hudson
10/6/2015

3

Intersection turning movement counts (TMC)

TMC data is collected during peak hours, by 15 minute intervals, and includes vehicular, pedestrian, and bicycle volumes. Typically, traffic analysis focuses on the A.M. and P.M. peak hours when commuter traffic volumes are highest, but when schools are part of the study, the midday peak (at school dismissal) is also considered. TMC data was collected at the intersection of Lincoln Road/Ballfield Road on Friday, October 2, 2015, from 6:30 A.M. to 9:00 A.M. and from 2:00 P.M. to 6:00 P.M.

This data is used as input to peak hour intersection analysis, which assesses traffic operations in terms of level of service, vehicle delay, and queuing. At the Lincoln Road/Ballpark Road intersection, the peak hour times were identified as 7:00 – 8:00 A.M. (morning), 2:45 – 3:45 P.M. (midday), and 4:45 – 5:45 P.M. (evening).

Peak hour intersection analysis results are presented in a later section.

Delay and Queuing Study

Aside from when major Campus events end, such as community gatherings or the Fourth of July fireworks, the longest delays experienced along Ballfield Road occur during the school dismissal period. To understand driver delay and the associated queues, observations of vehicles exiting Ballfield Road at the Lincoln Road intersection were made on a typical school day.

It should be noted that this type of detailed observation is not typically undertaken for traffic impact studies. Instead, the assessment of intersection operations involves using the volumes, intersection geometry, and traffic controls and applying standard traffic engineering methodologies to estimate resultant delays and queues over the peak hour. But, given the importance of this intersection to the Campus and the concentrated traffic volumes during the arrival and dismissal periods, the study team chose to collect this data directly.

Delay and queue observations were conducted on Friday, October 2 and Monday, October 3, 2015, between 7:30 – 8:30 A.M.. (morning peak hour) and 2:30 to 3:30 P.M. (midday peak hour). The process involved recording the length of time each exiting vehicle had to wait to turn onto Lincoln Road. Each vehicle was tracked individually. Due to the long, winding queue that develops along Ballfield Road during the dismissal period, two technicians, who were in constant headset communication with each other, were needed to track the time vehicles entered the queue and the time they were able to turn onto Lincoln Road. Vehicles along Lincoln Road move freely through this intersection (no stop sign) and, therefore, do not experience meaningful delays or queues.

The results of the delay and queue observations are discussed under the intersection analysis section.

Sight Distance

The study team performed a sight distance analysis in conformance with guidelines of the American Association of State Highway and Transportation Officials (AASHTO) at the intersection of Lincoln Road/Ballfield Road. Sight distance considerations are divided into two categories: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD). Stopping Sight Distance (SSD) is the distance required for a vehicle approaching an intersection from either direction to perceive, react, and come to a complete stop before colliding with an object in the road, in this case a vehicle exiting from Ballfield Road. Intersection Sight Distance (ISD) is based on the time required for perception, reaction, and completion of a desired maneuver. In this study, the ISD was measured for drivers exiting Ballfield Road onto Lincoln Road.

Both the ISD and SSD are acceptable at the Lincoln Road/Ballfield Road intersection. While the sight distances are safe at this location, it should be noted a variety of "sandwich board" signs are often in the median on Ballfield Road advertising local events. These signs can pose an unsafe distraction to drivers and their size and placement should therefore be carefully reviewed.

Crash History

The Lincoln Police provided town-wide crash history statistics for the years 2010 through 2014. During 2010, the number of reported crashes was 136. After 2010, the number of crashes trended down to 69 in 2014. Some Lincoln residents have wondered if older drivers to a community center may pose an additional safety risk on the Campus. Based on the number of crashes by age group and the number of Lincoln residents by age group, the rate of crashes for drivers aged 65 and over was determined to be about half that of younger drivers, leading to the conclusion that the driver age group likely to frequent a community center is not statistically likely to contribute to an increased accident rate.

Intersection analysis

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay incurred by vehicles along intersection approaches. Trafficware's Synchro (version 9) software package is typically used to calculate average delay and associated LOS at intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2010 Highway Capacity Manual (HCM). As described earlier, the delay and queue observations conducted for this study provide a set data to understand existing conditions at the Lincoln Road/Ballfield Road intersection.

LOS designations are based on the average delay per vehicle. Table 1 displays the corresponding intersection level of service criteria for unsignalized intersections. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. LOS C or D, or better, is typically considered acceptable in an area such as Lincoln. However, LOS E or F is often typical for a stop-controlled minor street that intersects a major roadway.

Table 1. Unsignalized Intersection Level of Service Criteria

Level of Service	Average Stopped Delay (seconds/vehicle)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

The observed delays on Ballfield Road at the Lincoln Road intersection during the A.M. and midday peak hours are shown in Table 2 for the peak 15 minutes and for the remainder of the hour. While disaggregation of delays within the peak hour is not standard practice, the availability of the actual delay data allows this supplemental examination of the concentrated 15 minutes during the school arrival and departure peaks. The study team used the Synchro model to estimate delays along Lincoln Road and to assess p.m. peak hour conditions.

During the a.m. peak hour of 7:00 – 8:00 A.M., school staff, administrators, and parents from the Smith School, Brooks School, Pre - K program, and Magic Garden are arriving and dropping-off children. Parents then depart the Campus. Within the peak 15 minutes of the hour, the average observed delay for vehicles exiting Ballfield Road was moderate at 19.2 seconds (LOS C). During the other 45 minutes, the average delay was 7.3 seconds (LOS A). Note that volumes along Lincoln Road northbound are much higher than southbound, reflecting the morning commuter traffic heading toward Route 2 and points east.

As shown earlier in the graph of Ballfield Road traffic, exiting volumes are fairly low between 8:00 A.M. and 2:30 P.M. Parents start arriving at about 2:30 P.M. for school dismissal. The bell rings at 2:50 P.M. and there is surge of exiting vehicles from the Campus between 2:55 – 3:10 P.M. About 60% of the hourly vehicles exit during this 15 minute period.

It is during this peak 15 minutes that queues build along Ballfield Road from the Lincoln Road intersection. The average wait at the intersection for Ballfield Road vehicles (mostly parents and buses) during this time frame is about 90 seconds (LOS F). The longest observed wait time was about three minutes and the maximum observed queue was about 25 vehicles. The delays experienced during this 15 minute period are long. However, it is a short-lived period, and by 3:10P.M., the queue dissipates and average vehicle delays decrease back down to about 10 seconds.

The short-term congestion along Ballfield Road is typical of roadways that serve schools with a high proportion of parent drop-off and pick-up. During the afternoon dismissal, there is more congestion because all students are dismissed at one time, as opposed to the more dispersed arrival pattern in the morning. An advantage in Lincoln is that the Campus is self-contained and not located adjacent to other public streets, where non-school drivers may not be mindful of the school environment.

Intersection/Movement	Hourly Volume	LOS	Delay (seconds)	LOS	Delay (seconds)
a.m. peak hour (7:00 – 8:00 a.m.)			Peak 15 minutes (7:45 – 8:00 a.m.)		Other 45 minutes of peak hour
Lincoln Road/Ballfield Road	Total = 1,014				
Ballfield Road EB left right	99	C	19.2 ¹⁾	B	7.3 ¹⁾
Lincoln Road, NB left thru	600	A	1.2 ²⁾	A	1.2 ²⁾
Lincoln Road, SB thru right	315	A	0	A	0
midday peak hour (2:45– 3:45 p.m.)			Peak 15 minutes (2:55 – 3:10 p.m.)		Other 45 minutes of peak hour
Lincoln Road/Ballfield Road	Total = 779				
Ballfield Road EB left right	184	F	91.2 ¹⁾	B	6.4 ¹⁾
Lincoln Road, NB left thru	213	A	1.8 ²⁾	A	1.8 ²⁾
Lincoln Road, SB thru right	382	A	0.0 ²⁾	A	0.0 ²⁾
p.m. peak hour (4:45 – 5:45 p.m.)			Peak 15 minutes (5:15 – 5:30 p.m.)		Other 45 minutes of peak hour
Lincoln Road/Ballfield Road	Total = 908				
Ballfield Road EB left right	88	C	18.8 ²⁾	C	18.8 ²⁾
Lincoln Road, NB left thru	209	A	1.2 ²⁾	A	1.2 ²⁾
Lincoln Road, SB thru right	611	A	0.0 ²⁾	A	0.0 ²⁾

1) Observed

2) Based on Synchro model

The intersection volumes and approach volumes (entering the intersection) are shown below in Table 2 - Existing (2015) Conditions - Level of Service Summary.

Between 3:15 P.M. and about 6:00 P.M., as after school programs and other recreational events end, there are smaller surges of exiting traffic along Ballfield Road, but these volumes are lower than during the school dismissal period. It is worth noting that the directionality of traffic flows along Lincoln Road (A.M. peak northbound and P.M. peak southbound) tempers the delays experienced on Ballfield Road. If Lincoln Road traffic flows were equally distributed in the northbound and southbound directions, it would take more time for a driver exiting Ballfield Road to find an acceptable gap in the Lincoln Road traffic flow.

When considered over the course of the day, the traffic operations of the Lincoln Road/ Ballfield Road intersection are satisfactory. While the short-lived congestion during school dismissal is not desirable, it is not uncommon in similar school environments. Placing a community center on the Campus should not be precluded because of traffic congestion during a short period of the day. There is ample roadway capacity most of the day at the Lincoln Road/Ballfield Road intersection to serve increased traffic volumes from a community center.

The estimated new vehicle trips associated with a community center is addressed in the section of this study showing examples of potential options.

Conclusion

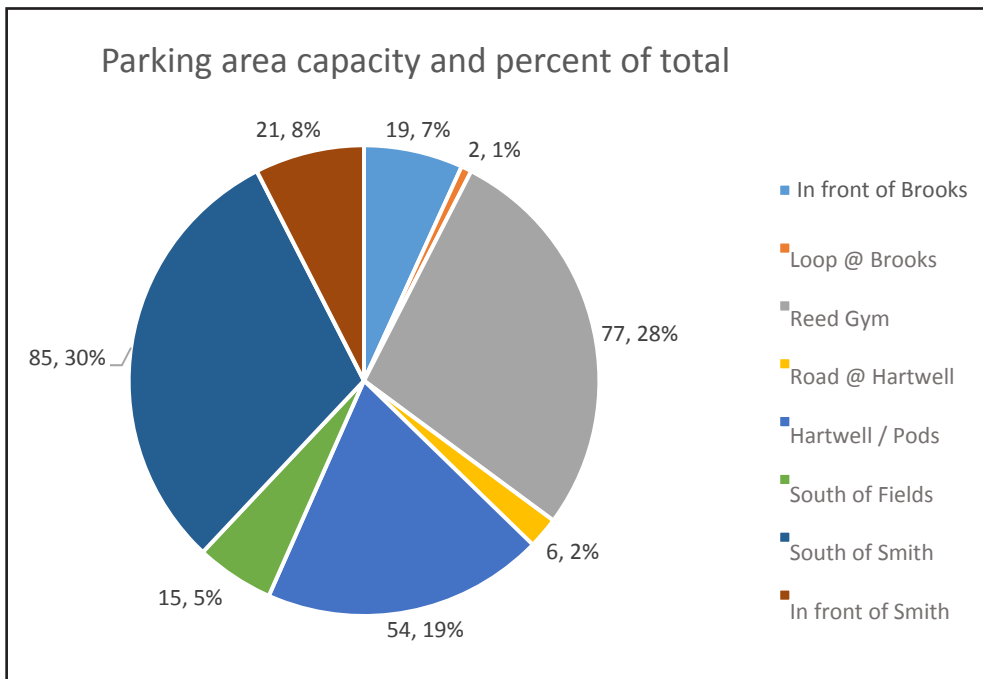
Based on the evaluation of existing conditions, the intersection of Lincoln Road/Ballfield Road has adequate capacity for current traffic volumes and could accommodate trips generated by a community center. Based on the traffic analysis conducted in the study, there is no operational need for a secondary Campus driveway nor is there a readily available or workable location for such a driveway.

Future planning should be mindful of the effectiveness of the geometry and configuration of the existing roads in providing traffic calming. Improvements to pedestrian safety and vehicular movements on Campus should be relatively easy to implement.

PARKING

The Ballfield Road Campus has eight formalized parking areas, ranging in capacity from two to 77 spaces. The marked spaces total 279, with 13 designated for handicapped motorists. The lots are dispersed around the Campus, with most addressing a particular activity or building.

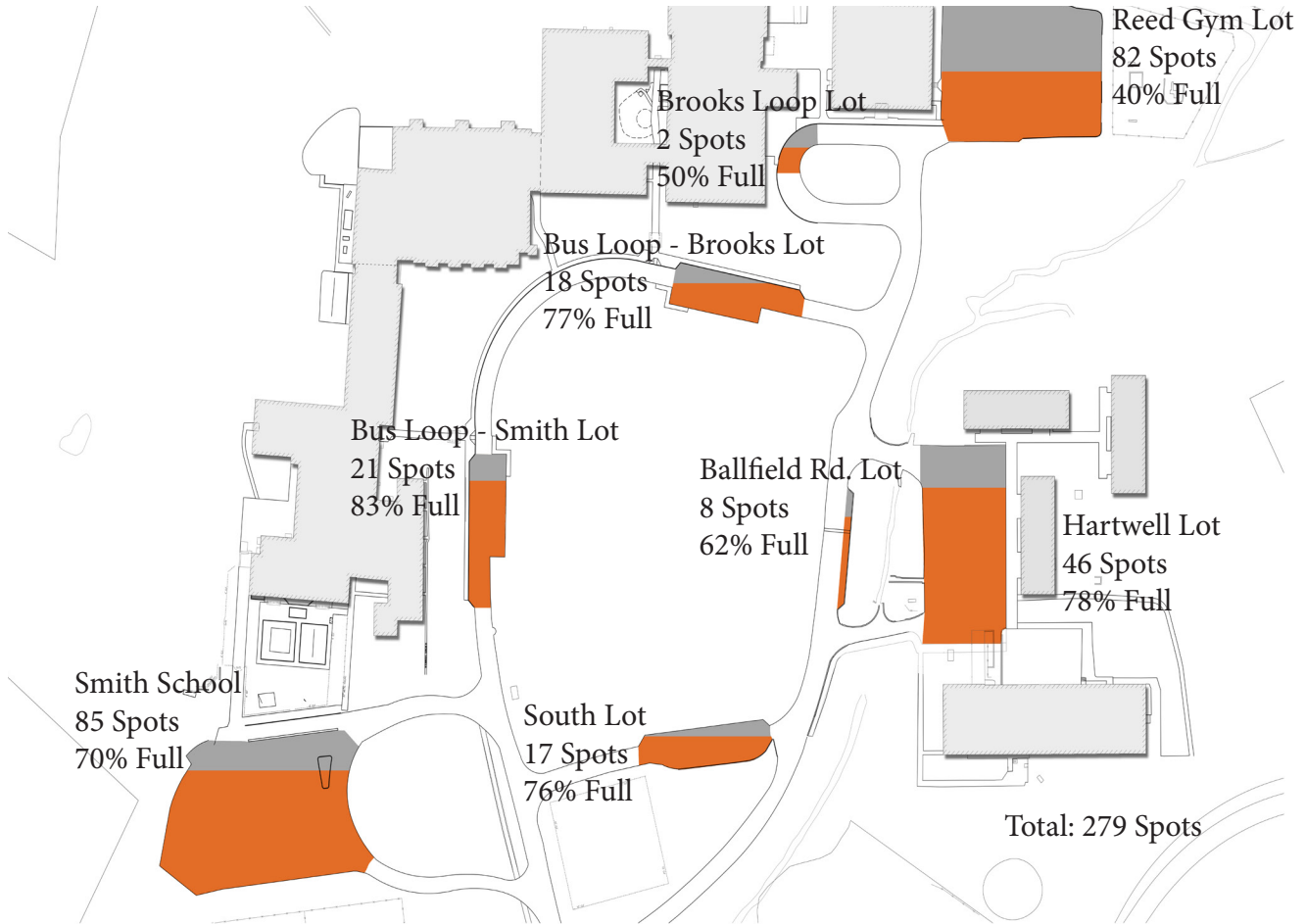
The larger lots are at the Hartwell / Pods, with 55 spaces; south of the Smith School, with 75 spaces, and at the Reed Gym, which has 77 spaces. The remaining lots include in front of the Brooks School with 19 spaces; in front of the Smith School, with 21 spaces; at the south end of the center fields, with 15; along Ballfield Road near Hartwell School, with six spaces; and on the driveway loop in front of the Reed Gym and Brooks School, where there are two spaces designated for handicapped motorists.



Given the mix of uses and schedules of activities on the Campus, there is concern that there may be a lack of parking in certain areas when schedules overlap. To develop data that will help to address this concern observations were taken on-site on Wednesday, August 5th; Monday, September 21st; Thursday, September 24th; and Wednesday, October 7th.

The August 5th counts were understandably light, as summer school and camp programs were running in conjunction with typical summer activities such as the Codman pool. When observed at 9:00 A.M. the lots were less than 30% full. The largest number of cars were parked in the Hartwell / Pods lot, which correlates to the year-round nature of the departments located in these buildings. The Field House lot had a fair number of vehicles parked, predominantly for those using the Codman pool but also some who were working at the summer camps or using the Codman Field.

The most consistent parking demand is generated by the school programs, thus parking counts were undertaken on a number of days in September and October to provide a comparison to the August 5th counts. Parking use counts were done at 7:00 and 9:30 A.M., noon, and then at 1:30 and 3:45 P.M.



This diagram illustrates a typical mid-day parking load during the school year. For planning and operational purposes, a surface parking lot utilized predominantly by the same drivers on a daily basis is considered to be full when it reaches 85% occupancy.

As can be seen from the diagram, applying that standard to the Ballfield Road Campus would classify all of the lots as having available spaces. However, given the nature of the uses on the site and the location of the lots, with the exception of the Reed Gym lot, all of the seven other lots could be considered to be essentially full.

The reason for this is that the Hartwell lot and the Smith School lot are both shared with other, more transitory uses, including the school administrative office and pre-school programs at Hartwell and the tennis courts at the Smith lot. The five other lots have lower capacities, making percentages misleading; for example, the Brooks Loop lot has two spaces, with one used the use percentage is 50%, but only one additional space is available.

Parking facilities must be located within convenient walking distance of the destinations they serve. The current location and configuration of the parking areas limits the effectiveness of the lots to serve anything other than the building or asset near where they are located. This results in the under utilization of the Reed Gym lot for the school functions, though it is well used for a limited number of town-wide events.

The lack of a clear walking path from the Reed Gym lot to either Hartwell or any other area is likely an additional contributory factor in the lack of use of this lot.

Conclusion

The parking currently provided is adequate for the uses currently on the Campus. However, the location of the Reed Gym lot effectively renders almost 30% of the available spaces less desirable and therefore under utilized. This contributes to informal or convenience parking along roadways and parking lots that are closer to the buildings and fields.

BUILDINGS

The Ballfield Road Campus provides the Town of Lincoln with preschool, elementary and middle schools at one location. With the pre-school at the Hartwell building and K - 8 at the Smith and Brooks Schools, the Campus is perhaps unique in New England as a public school setting that shares grounds and assets with the public during the school day, with little restriction of individuals not associated with the school program.

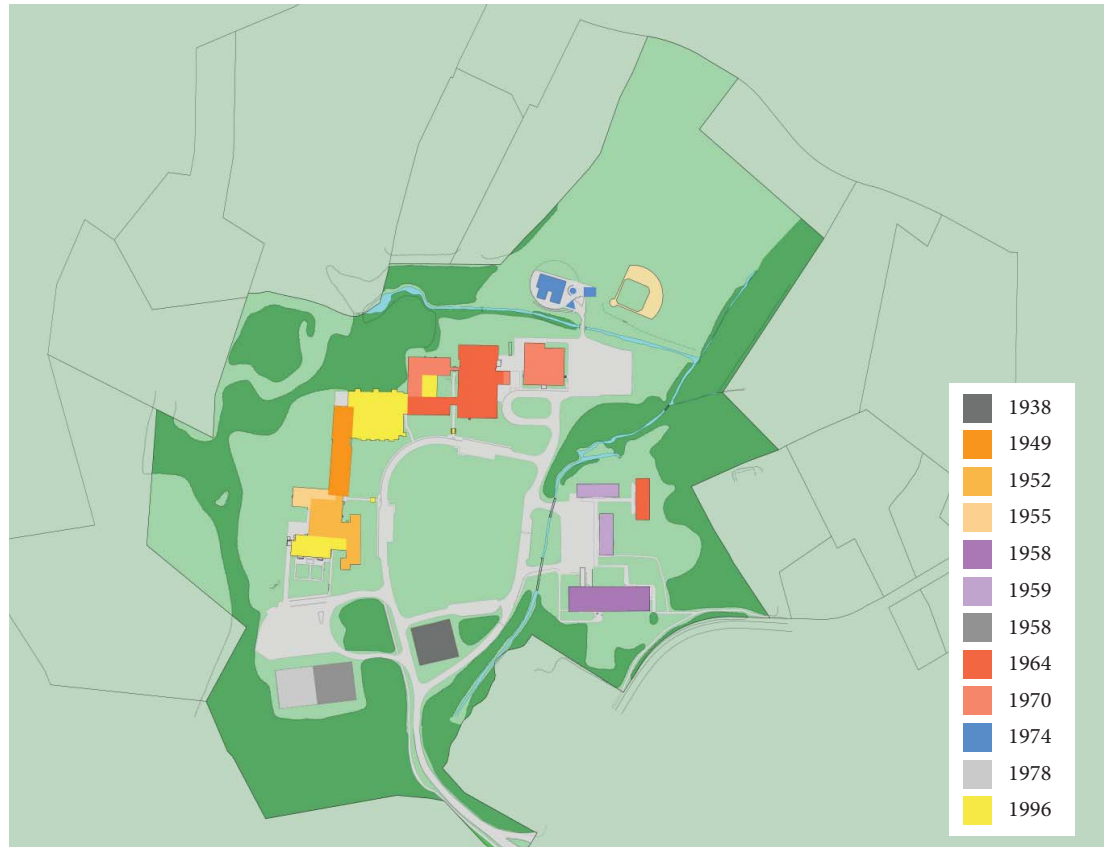
The current facilities are comprised of a grouping of buildings that date from 1948 through 1994. The public school system utilizes the majority of the buildings for either programs or support, including the district administrative offices.

The K - 8 program is housed in three buildings:

The Smith School, constructed in 1948, with an addition in 1953 which added six classrooms and a gymnasium, a four classroom addition in 1955, and a four classroom Kindergarten wing with computer lab in 1994.

Brooks Middle School, constructed in 1963, with an addition in 1970 which added six classrooms and a small addition containing two general education, a technical education and a life sciences classroom in 1996.

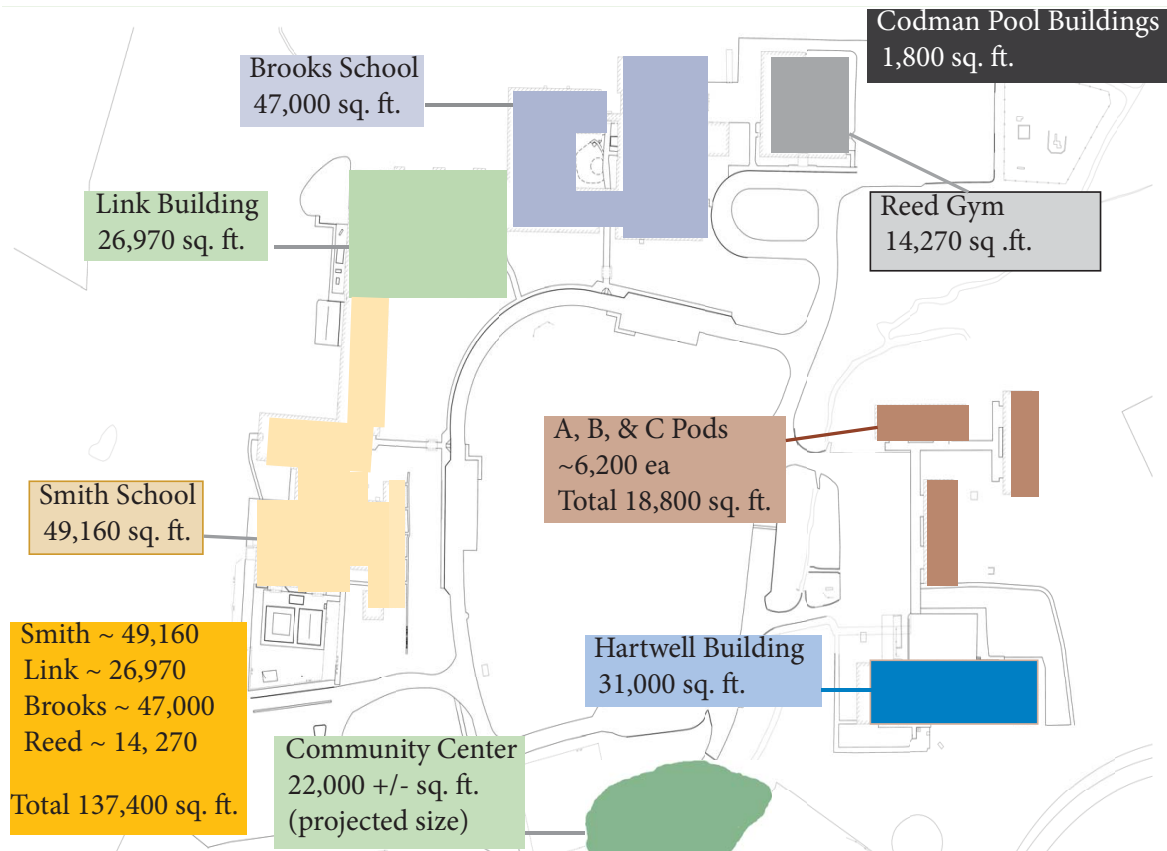
The Reed Gym was constructed in 1970. It is utilized as a cafeteria, gymnasium, and locker facility.



In 1994 the Library / Link building was constructed. This connected the Smith and Brooks Schools and provided six classrooms, a computer lab, keyboarding and music classrooms, a story room, health suite, and library.

The Hartwell Building was constructed in 1957 as an elementary school, with the addition of the three classroom pods in 1957, 1959 and 1963. The Hartwell building currently houses the district administrative offices and two preschool programs, while also providing storage for the district's supplies. The pods currently house District facilities shops, the Lincoln Extended day After school Program (LEAP) after school program, Parks & Recreation offices and program space, and program space for some Council on Aging and community program use as well.

The Codman pool and its appurtenant buildings were constructed in 1974. These buildings support the pool primarily, with some activity related to the fields and other outdoor activities.



Lincoln has paid particular attention to the condition of the school buildings for many years now, retaining a number of different architects over the past 15 years to assess the condition and potential options for improving or simply maintaining the buildings.

In 2000 LPBA / Architects Inc. were hired to develop a report on the conditions and code deficiencies of the buildings. The report enumerated a wide range of needs within each of the buildings along with various approaches that could be instituted to address many of the areas of concern.

In 2006 the architecture / engineering firm of Symmes Maini & McKee Associates was retained by the Town to conduct an evaluation of all of the buildings with the exception of the Codman Pool buildings. This report rated the Smith and Brooks Schools generally as fair, with certain areas and aspects as fair/good. The Library Link was rated generally as good, while the Reed Gym was rated fair to fair/good. The Hartwell building was rated generally good, while the Pods were rated poor to fair/poor.

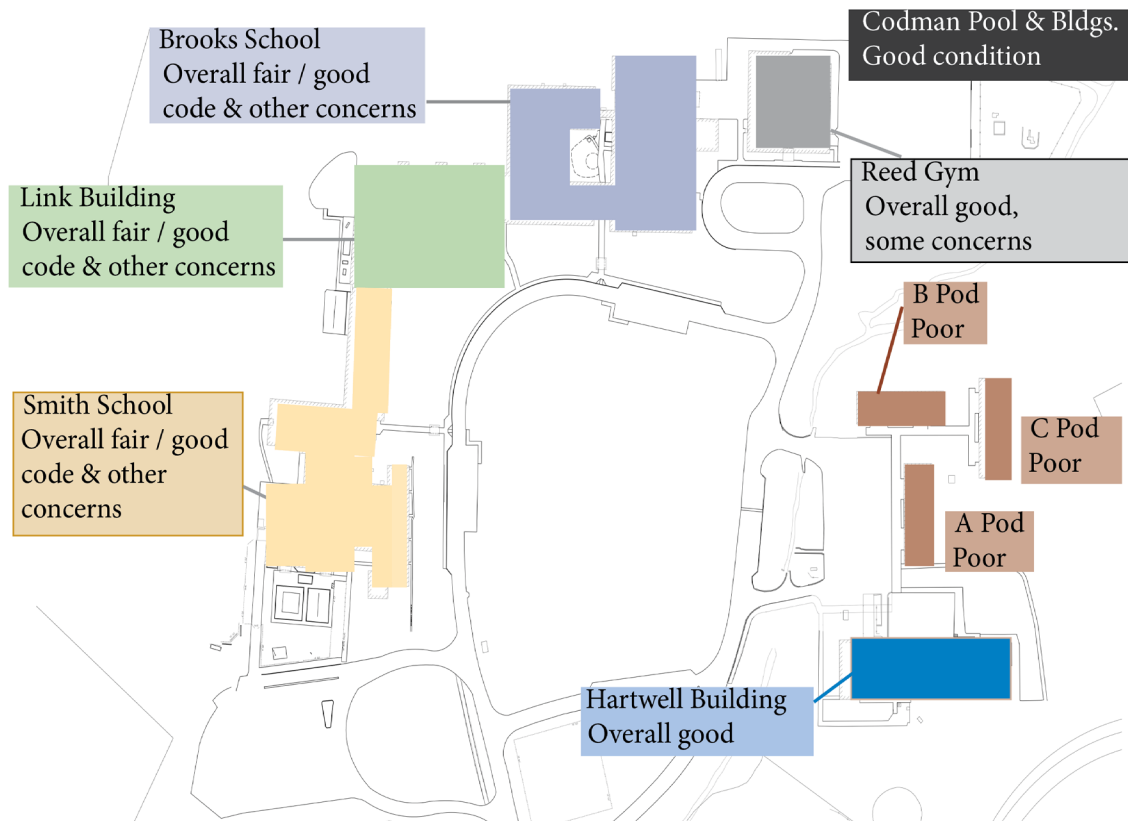
In 2011 the Town was accepted into the Massachusetts School Building Authority's construction program. The Office of Michael Rosenfeld was retained as the architect for this project. As part of their effort they were required to assess the buildings for suitability and condition. Quoting from the submittal to the MSBA:

Set on a 54 acre site and originally constructed in 1948, with subsequent additions and renovations in 1953, 1955, 1963, 1970, and 1994, the existing brick building has numerous deficiencies: most notably these deficiencies are related to handicap accessibility; hazardous materials; safety and security; water infiltration; the mechanical, ventilation, fire protection and electrical systems; and the energy efficiency of the complete building envelope. In addition, if the building is renovated to last another 50+ years, seismic and other structural implications will also be required. In summary, the building systems throughout have reached their life expectancy and the cost to replace would be significant.

The funding for the MSBA partnered project was not supported by the voters of Lincoln, and the Town subsequently retained Dore & Whittier Architects to develop potential alternatives for the renovation or replacement of the school buildings. As part of this effort the team from Dore & Whittier reviewed the condition of the buildings again to assure that any upgrades or work done in the interim was adequately acknowledged within their report.

The Dore & Whittier study developed a number of potential avenues for consideration in addressing the building and programmatic needs of the District. These are included as the basis for those aspects of the Campus that pertain to the schools in subsequent sections of this Master Planning report.





As part of the effort to conduct a thorough master planning effort, the LLB consultant team toured each of the buildings on the Campus. Representative drawings, reports, and other data was reviewed as well. Though it is not the intention of this Master Planning effort to design a building, it is important for the needs of both the program and the facilities to be understood, as they both form an integral part of the report's foundation.

The efforts of the LLB team were directed toward the development of an understanding of how the buildings function now, how they may have changed since the previous reports were written, and what may be considered as some of the more noticeable drivers for change or investment.

The conclusions are in line with those of the previous professional teams. The buildings have essentially reached or surpassed their useful lives and require in-depth consideration as to how to best invest the town's resources to achieve the best return.

Previously reported deficiencies such as indoor environmental aspects (noise and sound control, lighting, heating, cooling, moisture, etc.), difficulties imposed by the floor plan (security of entries, ease of administration, travel time for students, lack of a cafeteria, for example) and numerous areas of concern with structural or mechanical systems (the mechanical room in the Smith School, the walls of the Reed Gym) were noted.

In addition, many of the previously reported ADA / MAAB compliance concerns are yet to be addressed.

Conclusion

The project team investigated all of the buildings and found conditions to be similar to those reported previously. The Smith and Brooks Schools, along with the Library Link and Reed Gym are all in need of considerable investment. The Pods have moved past the point of economical renovation and would require significant upgrading to come into compliance with applicable codes if they were to be re-purposed. The Hartwell building is in reasonably good condition and, of all of the large buildings on the Campus, is the one that could be realistically retained as it is currently configured.





SECTION 3 - PUBLIC OUTREACH AND ENGAGEMENT

The Campus Master Planning Committee is made up of Town of Lincoln staff and residents that represent a wide-range of stakeholder groups and Town boards. The CMPC demonstrated a commitment to community engagement by providing five public forums and on-going committee meetings that were open to the public and encouraged public comment and input. This section summarizes the public events and the input gathered at each event.



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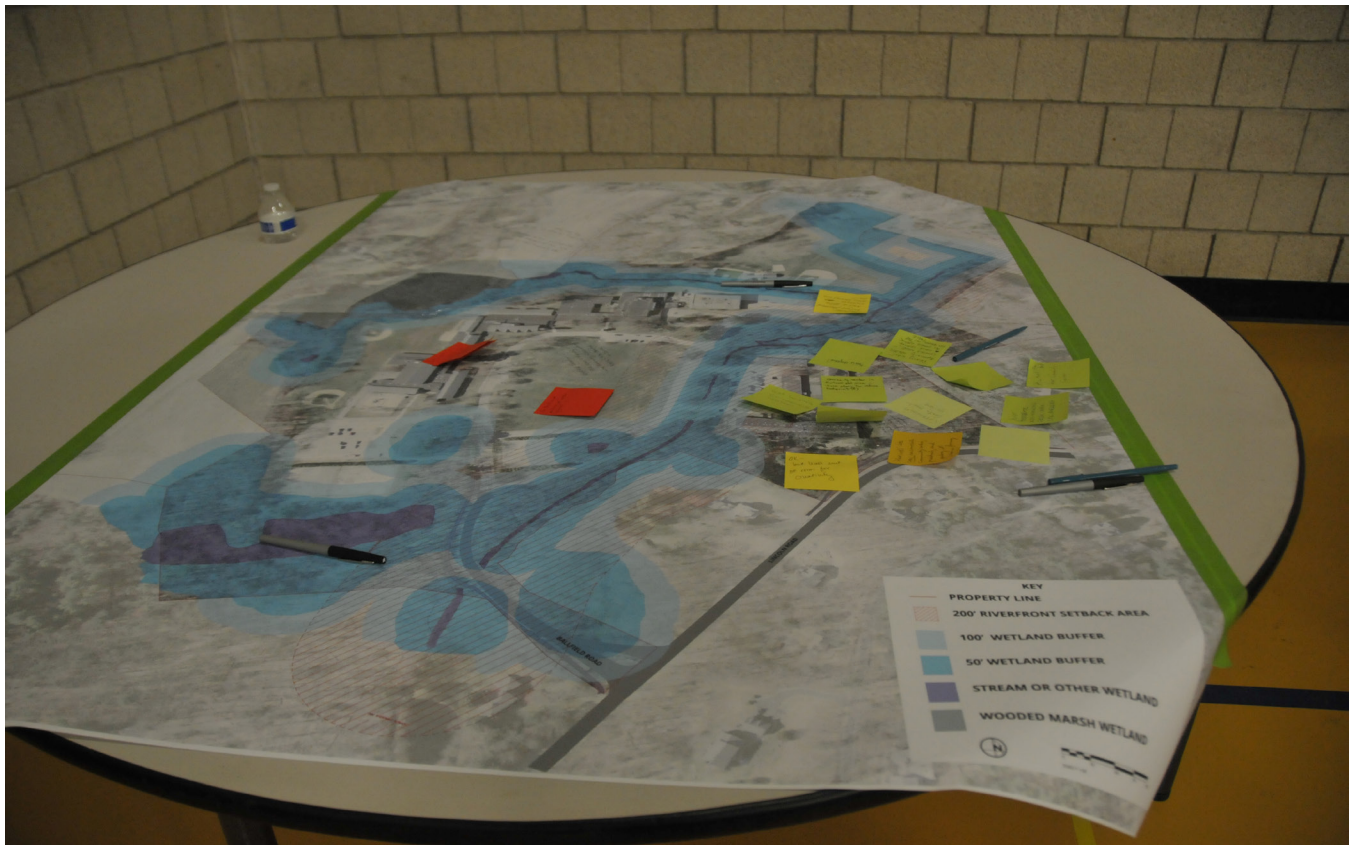
Legend:

- PROPERTY
- 200' RIVERFRONT SETBACK AREA
- 200' WETLAND BUFFER
- 50' WETLAND BUFFER
- STREAM OR OTHER WETLAND
- WOODED MARSH WETLAND

THOUGHTS, DESIRES, AND OPINIONS OF THE PUBLIC

Great effort was made to provide opportunity for the voice and opinion of the residents of Lincoln to be heard. Through various engagement means the CMPC learned:

- There is a strong desire to improve the learning environment and opportunities on the campus;
- The majority opinion favors a campus with improved pedestrian accommodations;
- Increasing the number of athletic and recreational fields is an important consideration;
- The majority feel the character of the campus is closely tied to the relationship between the buildings and open space, not to the buildings themselves.



A CONTINUOUS DIALOGUE WITH THE PUBLIC

From the start of the study in July to the presentation of the draft report in December, the CMPC met 14 times. Each of these meetings was publicly convened and conducted with a very open and inclusive approach to members of the public who attended. There were typically between three and a dozen members of the public in attendance and many of these individuals offered their insight and opinion freely and openly.

To supplement the work done by the CMPC and consultants, and to provide a broader venue for public input, the committee conducted five public engagement and outreach sessions.

PTO BACK-TO-SCHOOL NIGHT - SEPTEMBER 10, 2015

This first public forum aimed to make the school community aware of the existence and efforts of the Campus Master Planning Committee.

PUBLIC ENGAGEMENT FORUM - OCTOBER 15, 2015

The broadest reaching engagement effort of the Committee's term, this forum solicited input from participants both in groups and as individuals.

(The full presentation is included in the Appendices)

PTO AND COA ENGAGEMENT FORUMS - OCTOBER 30, 2015

These forums allowed two key stakeholder groups the opportunity to offer input in a focused environment, giving direct insight into the concerns of each group.

(The full presentation is included in the Appendices)

THE STATE OF THE TOWN - NOVEMBER 14, 2015

A concisely focused presentation of the Committee's work to date, intended to reach the largest audience of any of the forums.

(The full presentation is included in the Appendices)



PTO BACK-TO-SCHOOL NIGHT - SEPTEMBER 10, 2015

At this event the CMPC was provided with a table and space in the Smith Gym for the two hour back to school open house. Several CMPC members and some of the consultant team attended. Displayed at this event was the Joint Charge from the Board of Selectmen and School Committee, a question board asking "The thing I value most about the Ballfield Road Campus is..." and a large aerial photo of the campus.

Attendees were mostly engaged in discussion with CMPC members and the consultants, seeking to develop an understanding of what the committee was undertaking and how the process may proceed.

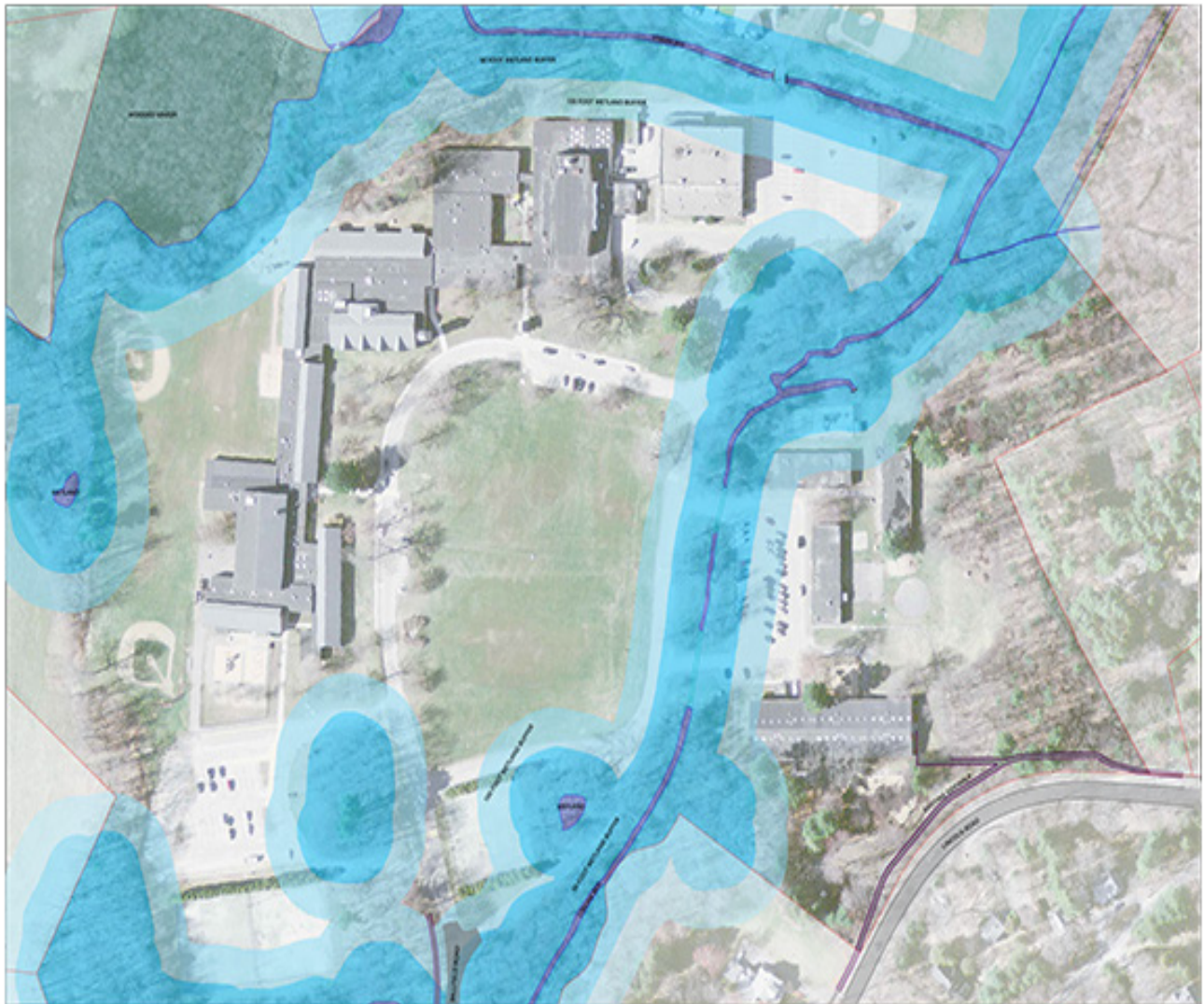
Public engagement was encouraged by offering participants the opportunity to write their thoughts on index cards and to then leave the cards in a collection jar. Seven responses were received. The sentiments shared through these responses are in line with those recorded through each of the outreach efforts. The handwritten responses included:

THE THING
I VALUE MOST
ABOUT THE
BALLFIELD
ROAD CAMPUS
IS...

1. Trees!
2. Its open feel
3. That it's so easy to get from place to place, and so many things are here.
4. Children have a strong sense of comfort/ownership/safety of place. They feel like this (Smith) school is theirs - (not alien, detached.)
5. The sense of space and natural environment
6. The schools & playing fields (community facilities being here not as important to me)

Some of the most difficult aspects of planning to convey are the actual limitations that result from the physical size of program elements such as buildings, parking lots, and athletic fields. To help bring these realities to the forefront, a mapping exercise was offered as another engagement activity

Participants were encouraged to place each of the program elements on the site. This helped in developing an appreciation of the limitations and restrictions of the campus when working within the various regulatory and site constraints.



PUBLIC ENGAGEMENT FORUM - OCTOBER 15, 2015

The first of two large public outreach opportunities, this event occurred at roughly the mid-point of the planning effort. The event consisted of two primary parts. First, a presentation of the engineering and regulatory assessments completed by the consultant team. Second, the public was invited to engage in exercises designed to collect public insight and guidance for the CMPC on how to proceed. The event was held in the Reed Gym and ran for two hours. All of the committee members and the full consultant team were in attendance.

The presentation introduced the limitations and realities present on campus that any future design project must grapple with in order to be successful. Audience members were allowed the opportunity to ask questions on the presentation prior to moving to the engagement activities.

There were four areas where the public engaged directly with the CMPC's planning efforts. There were three site maps, each with a different example of how the Campus may evolve, the fourth area consisted of six open-ended questions. The central idea for the activities was to begin a dialogue amongst neighbors, CMPC members, and the consultant team. From that conversation the residents of the Town would begin to establish a vision for the campus, giving the CMPC the direction it needed. To close the evening, at the end of the engagement activities was another question period enabling citizens and the consultants to tackle commonly held questions in one large setting.

In total there were four stations that allowed citizens to engage with each other and consultants, and then leave their individual comments using sticky notes. With the six questions, citizens were encouraged to leave as many comments as they had to offer.

With the three map stations, citizens were asked to indicate which mapped scenario they supported most (green), some (yellow), or least (red) by placing the corresponding color sticky note on the map along with any comments guiding their choice.

Attendees were also encouraged to give comments by writing directly on each map.

CAMPUS MASTER PLANNING STUDY PUBLIC FORUM

LEND YOUR VOICE TO THE FIRST-EVER CAMPUS MASTER PLANNING EFFORT OF BALLFIELD ROAD

THURSDAY, OCT 15TH
7-9 PM
BROOKS GYMNASIUM,
LINCOLN SCHOOL

ATTENDEES WILL:

- LEARN THE PAST HISTORY OF THE BALLFIELD ROAD CAMPUS
- BE APPRISED ON PAST SBAC AND COMMUNITY CENTER EFFORTS
- HAVE AN OPPORTUNITY TO PROVIDE INPUT TO PROGRESS THE VISION OF THE BALLFIELD ROAD CAMPUS

Questions? Email us: lincolncmpc@gmail.com



In reviewing the comments from the night, the CMPC and consultant team identified a number of areas where attendees shared similar sentiment by a wide margin, most of which the Committee expected to hear. These conclusions included:

- The Hartwell area is the preferred location for the Community Center;
- The two primary functions proposed for campus, Schools and Community Center, hold significant importance and value to the community. The campus is already seen as a Community Campus, and the Community Center will positively re-enforce this sentiment. But that this should not happen at the expense of the school or student needs;
- It is important to preserve the Center Fields as open field space, as well as to maintain or improve the other green spaces or fields on campus;
- There is a strong desire to make physical improvements to vehicle, pedestrian, and bike infrastructure, such that safety and efficiency improvements are achieved for all modes.

There were some general sentiments the CMPC members were a bit surprised to see represented in the comments. Principle in these were:

- Wider than expected support for significant or wholesale changes to the school buildings with the aim to modernize the buildings for current educational standards;
- Wider than expected support for adding athletic fields, or at least doing something to improve the physical condition of the current fields for the long term;
- Less than expected support for finding a way to make the current school buildings fit new educational needs.



PTO AND COA ENGAGEMENT FORUMS - OCTOBER 30, 2015

Both meetings on October 30th used essentially the same presentation and format as seen at the October 15th Public Forum. Some modifications to the presentation addressed particular areas of expected interest or concern for each particular group. Both meetings were well attended, with a considerable amount of interest expressed by the attendees regarding the efforts of the CMPC and the potential for the two building projects to move forward once the master planning effort was complete.

Parent Teacher Organization (PTO)

The PTO event took place in the morning in the story room in the Library Link building as part of the PTO's regular monthly meeting. Approximately 35 people attended and a wide-ranging discussion ensued after the presentation.

The majority of the attendees participated in the question activity and their responses reflect their particular interest in the schools and the future of the campus.

Council on Aging (COA)

The Council on Aging forum was held at Bemis Hall in the afternoon. The presentation was the same as that given in the morning except for addressing issues that may be important to COA attendees. The six question activity was the same one used at the morning session.

Approximately a dozen people attended this forum and the discussion was, as with the PTO, very much focused on the particular interests of the participant group.

Engagement and Feedback

The attendees were encouraged to provide input by responding to the same six questions posed at the town-wide engagement meeting held on October 15th. The map activities were skipped due to time and space limitations.

The PTO and COA responses to the six questions largely had the same general tone of the responses from the October 15th Public Forum. Particular comments from the two groups did tend to focus on topics important to parents or senior citizens, as was expected.

The PTO meeting attendees were particularly interested in improving the schools and the educational experiences for the students. They also tended to support the addition or improvement of athletic fields. There was support from PTO attendees regarding the desire for inter-generational or communal learning spaces on campus, most likely in the Community Center but possibly in the school as well.

The COA meeting attendees were concerned about the location of and amount of parking on campus generally, but specifically in the Hartwell area. This concern was echoed at all of the public outreach meetings, but COA attendees were particularly worried about the ability of seniors to walk great distances and how that might hurt attendance at events.

<h2 style="margin: 0;">I feel the campus is most importantly a ...</h2> <p style="margin: 0;">18 respondents total (PTO Forum 30 October, 2015)</p>	
<h3 style="margin: 0;">School related - 13 comments</h3>	
	Place where a wide variety of age groups gathers;
	Safe school campus for kids of all ages (preschool - 8th) in Lincoln;
	School ;
	Area to serve hundreds of kids & they feel safe;
	Place to educate kids;
	Public school where safety, education, and functionality is important;
	A place to support learning in many different ways;
	K - 8 School;
	Welcoming space & draw for all ages in community - year-round;
	Place to spend all day: school then sports then community center acitivity;
	Place of education;
	School - a central part of community;
	A place for learning. Creating a great environment for children and also extending this to the older community. Our children are our future, and if we can take care of our future citizens and foster a nurturing environment for them to grow. Our real estate values will decline unless we can build a new school;
<p style="margin: 0;">These comments centered on the ideas of learning within and as part of a community.</p>	
<h3 style="margin: 0;">Campus related - 11 comments</h3>	
	The heart of Lincoln;
	Safe place for kids to be;
	Non commercial focal point of the town;
	Visually appealing, lots of trees still (as we have);
	Community gathering spot;
	Place for the community to gather;
	Community feel multigenerational to benefit all within the community. Expand our recreational programs as well as educational;
	Public space;
	Centralized hub of activity for the Town of Lincoln - all seasons of the year - school (Sept - June) and summer with Codman Pool & 4th of July events, location of town soccer, etc.;
	Community that can be utilized by the whole town of Lincoln - - students, parents, family, seniors - - promoting education, health, fitness, and environmental awareness and appreciation;
	Community gathering space that highlights what the Lincoln community holds near and dear: open space, children, families, seniors, gathering, quiet/peace, earth-friendly/green/innovative space;
<p style="margin: 0;">These comments trend in a vein similar to those pertaining to the school, but see the campus as part of a larger community.</p>	

THE STATE OF THE TOWN - NOVEMBER 14, 2015

The State of the Town (SOTT) presentation was eagerly anticipated by the CMPC and consultants as it provided the largest venue and audience for the work to that date. In total, 238 residents were checked in by the Town, giving potential for a broad cross section of opinion and ideas to come forward to help shape the Campus Master Planning report.

In the month between the public forum in October and the SOTT, the CMPC advanced considerably in their understanding of the existing campus as well as in the identification of examples of how the campus may be configured in the future. Due to this and the time constraints of the SOTT format, the committee's work was presented as a three part explanatory slide show followed by a moderated question and answer session.

The intention was to develop some commonly shared understandings of the parameters for future development on campus. This shared understanding would enable productive discussion during the Question and Answer period and serve as a basis for discussion of future efforts to develop projects on the campus.

From the beginning of their efforts, the CMPC felt strongly that each of the public forums should provide an opportunity for comments and suggestions to be collected. The State of the Town was seen as the culmination of the Committee's effort to collect opinion and perspective from community members.

Knowing that this would be a well attended meeting with a limited amount of time for interaction or activities and that most of the pertinent information would be presented, the Committee composed and distributed a questionnaire which solicited input on seven aspects of the campus plan.

Attendees were asked to complete the questionnaire after the presentation and question & answer session, so that their knowledge of the committee's efforts and particularly of the potential approaches to the campus would be as complete as possible at the time.

Of the 238 registered attendees, 162 returned the questionnaires by the end of the day. The results were collated and prepared in bar chart format for use by the CMPC and then shared publicly with the Lincoln community. The information gleaned from the questionnaire responses was seen by the CMPC as invaluable insight into the desires of the community and the direction in which the campus master planning effort might proceed.

State of the Town questions - a closer look

The questions posed at the State of the Town were crafted so as to encompass the predominant themes and ideas that had been brought to the fore in the earlier meetings. Thus it is that the responses to these questions arguably show the desires of the residents of the Town relative to the direction of the campus in the future.

The seven questions were intended to provoke thought and input relative to the juxtaposition of the impact of buildings and site elements upon the character of the campus, any preference for buildings or fields and green space, whether pedestrian or vehicular needs should take precedence in design, and the influence of any applicable regulatory requirements upon the overall planning of the campus.

The following pages provide an overview of the responses received at the meeting. Nearly 70% of the registered attendees responded to the questionnaire and their input is reflected in the examples which follow in this section.

Question # 1 showed more than 50% of respondents favoring reducing the footprint of the school in exchange for more athletic field space. 25% of the respondents disagreed with this question.

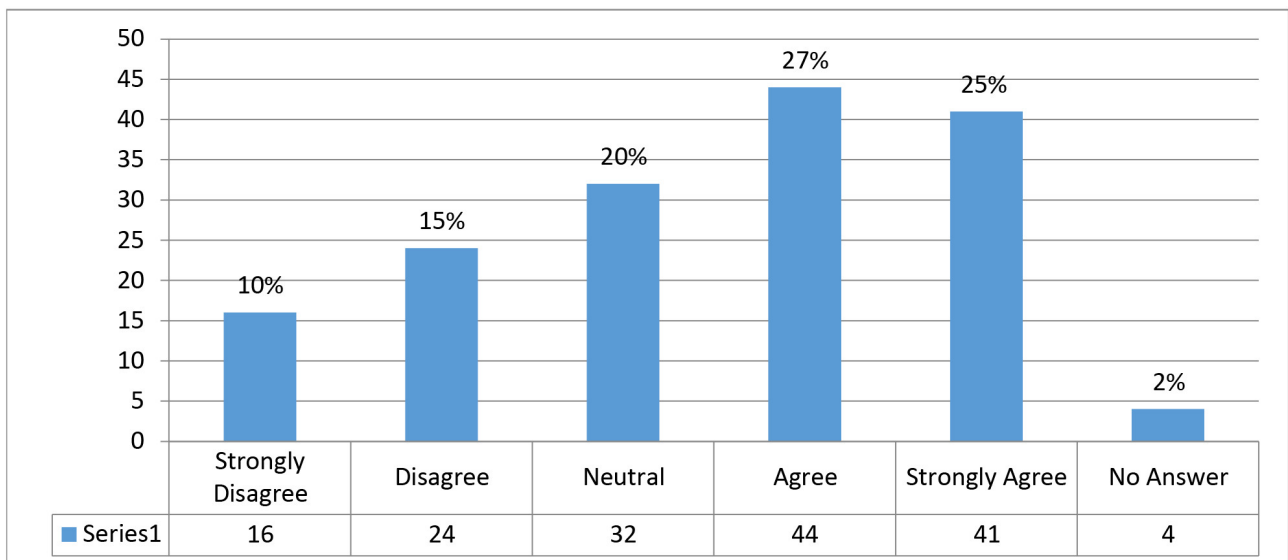
This provides guidance that may not have been gathered in previous efforts that addressed the school as a stand alone project.

Question #1:

Field space can be gained by reducing the overall footprint of the Lincoln School. This could mean elimination of portions of the existing buildings, and potentially a two-story school.

Gaining additional field space is a worthy reason to reduce the overall school footprint.

161 Responses



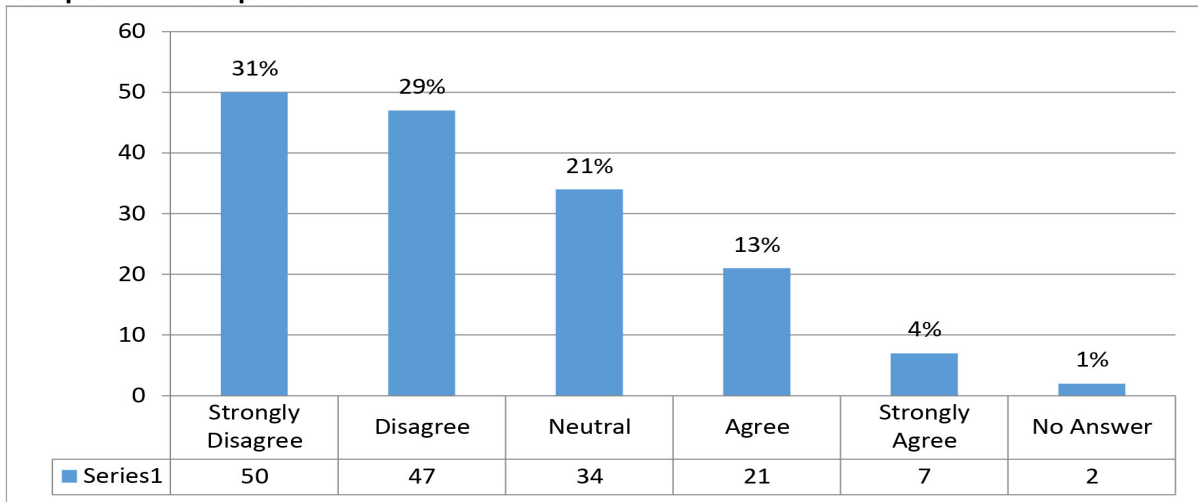
Question #2 saw 60% of the respondents opposed to an approach that favors the parking lot layout and design over the character of the campus.

This is not a surprising response, given the fervor shown in the preceding meetings relative to the character and nature of the campus.

Question #2

The distances of the parking lots from the building entrances are a major factor in creating the character of the campus. However, as a result, people park outside of the designated parking areas in order to be closer to their destination.

Locating parking near building entrances and fields is more important than the character of the campus. - 161 Responses



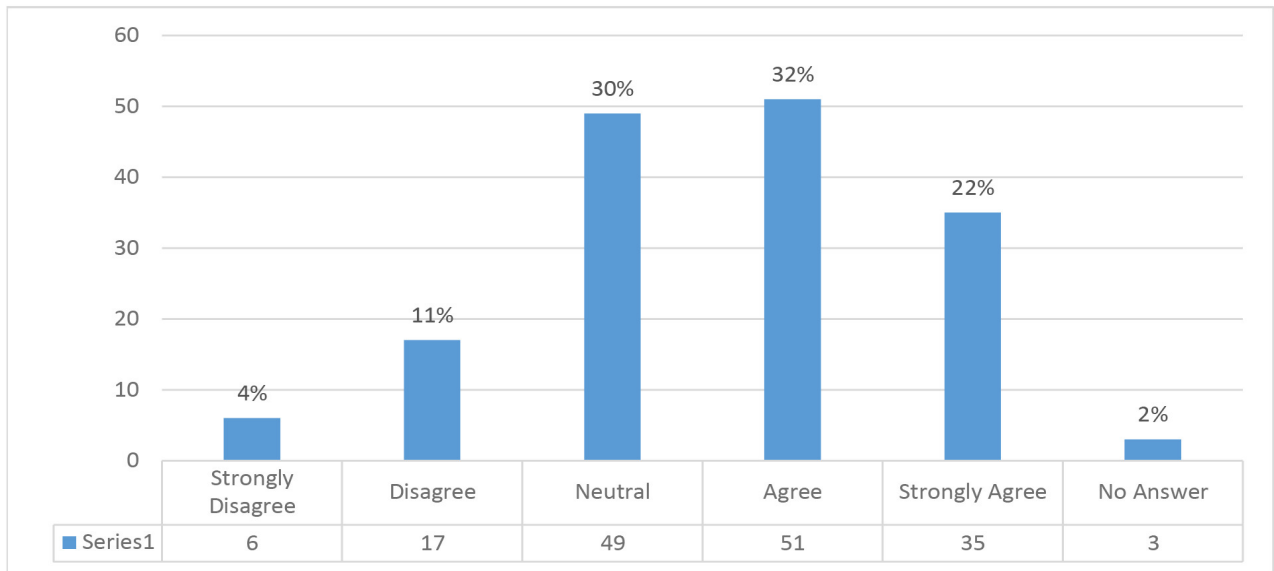
Question #3 had 54% in favor and 30% neutral on the question of pedestrian needs as the design driver over the vehicular needs.

This informs not only the immediate planning effort but the design initiatives expected for the school and community center and represents perhaps one of the bigger design paradigms for consideration as the Town moves forward.

Question #3

The campus experiences more vehicular than pedestrian traffic. The current roadway encircling the center green, and walkway in front of the school buildings, does not support the natural walking patterns that children and adults use to traverse the campus.

Pedestrian walkways should take precedence over vehicular drives and parking lots. 161 Responses



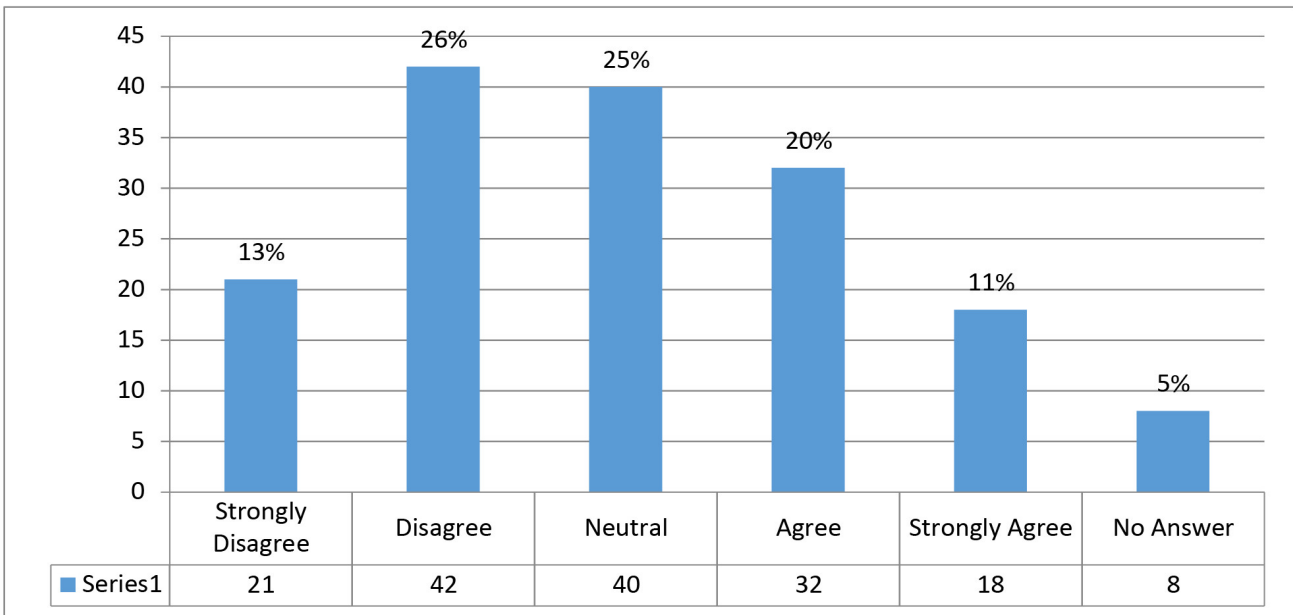
Question # 4 focused on the character of the campus and, when asked if the character is tied directly to the footprint of the current buildings, 39% of the respondents disagreed, and 25% were neutral.

Taken alone, or in concert with the other questions related to the buildings, this shows a leaning away from the current buildings and toward retention or replication of the overall character of the campus.

Question #4

The character of the campus is strongly rooted in the open spaces and the location of the buildings. Changes to any element may alter the character of the campus, but such changes could improve the character as easily as they diminish it.

The campus character is tied directly to the current footprint of the buildings. - 161 Responses



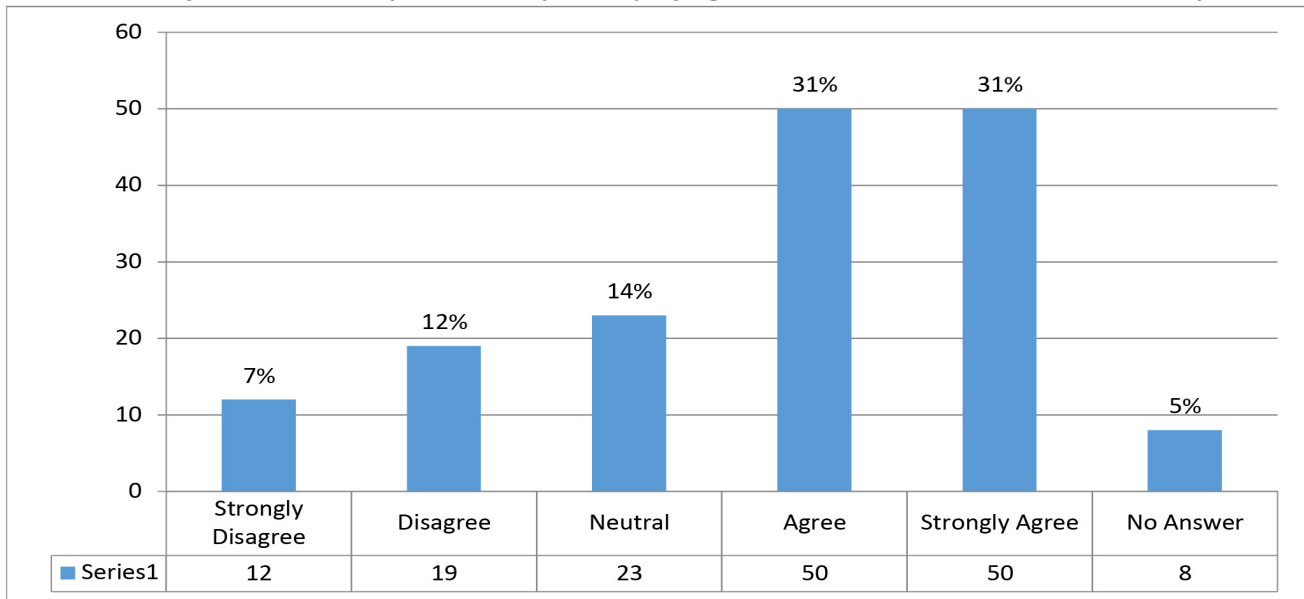
Question #5 had 62% of the respondents agree that consideration should be given to reducing the footprint of the buildings, even if at an increased cost, to gain a better educational environment and building efficiencies.

This is a response that could be anticipated, in that there was a steady current of input promoting the best educational environment possible as the most desired outcome, with many noting the a multiple story building may be the best way to attain that goal.

Question #5

Reducing the overall footprint of the school would mean more new construction and less renovation. This may also mean greater cost but brings a wider range of options in designing the educational environment.

We should consider reducing the footprint of the school in order to gain building efficiencies, better educational layout, and more space on campus for playing fields and other uses. 162 Responses



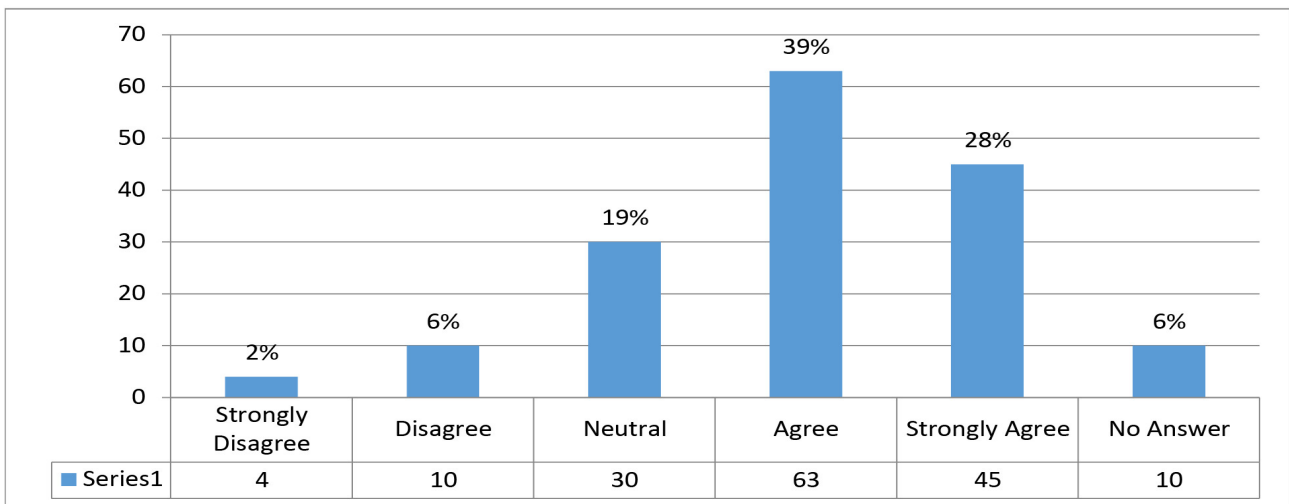
Question #6 gauged the relative importance of value in decision making, and 66% agreed that functionality, appropriateness, and life expectancy should be the driving factors if the projects exceed their previously projected costs.

This gives direction to future building committees and provides insight for discussion as budgets are assembled during the planning of those projects.

Question #6

Lincoln has spent a considerable amount of time and effort investigating the need and projected costs for both school and community center projects. All of the cost projections are based on projects at the conceptual stage and thus are provided as a range for that particular concept. As this is the first time the two projects are considered for the same site as collaborative projects, the final costs may vary from previous projections.

The value (functionality, appropriateness, and life expectancy) of the projects should take precedence in decision making if the costs exceed the previously projected costs. 162 Responses



Questions #7 sought insight on the importance of the regulated areas to the decisions made on the projects. In this instance 31% agree, 20% disagree, and 25% were neutral as to the importance that should be given to regulated areas as decision drivers.

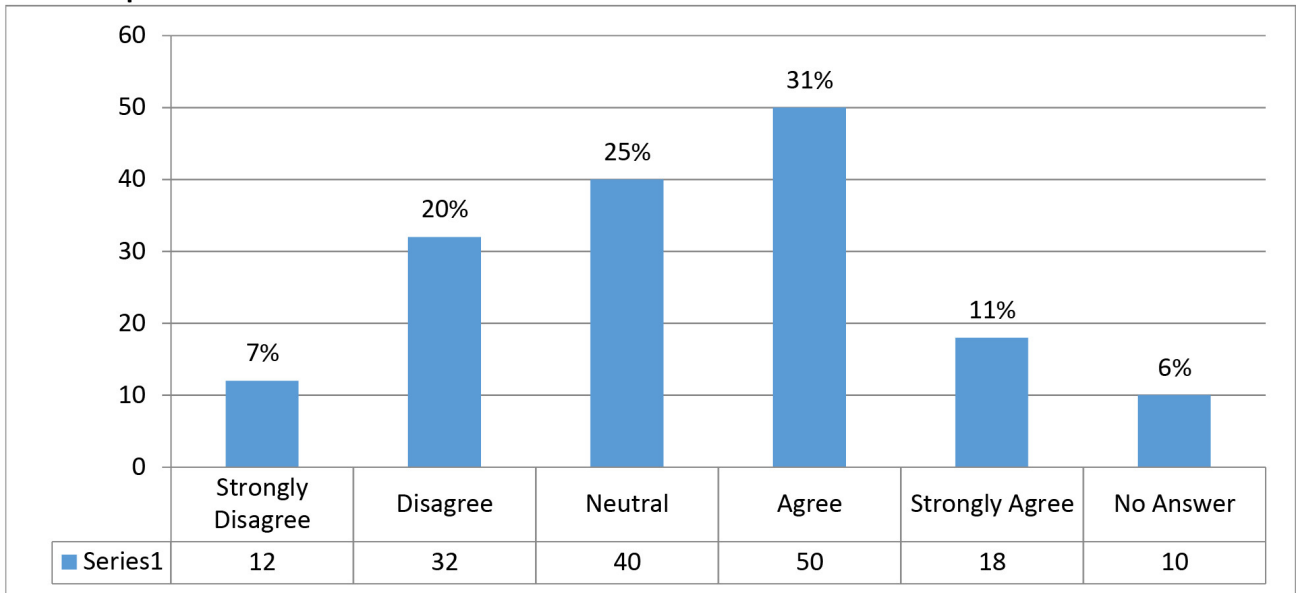
The impacts to the regulated areas, and thus of those areas on the projects themselves, can likely be mitigated if the future building projects are set up as environmentally focused efforts from the start.

Question #7

The site has many overlapping regulated areas (wetland buffers, riverfront setbacks). There is already considerable intrusion into these areas by current parking lots, roads, and buildings. There may be opportunity to reduce this intrusion, but achieving this may increase project costs, decrease building opportunities, or limit location of parking and roads.

Future projects should aim to reduce the impact on the regulated areas to the extent that is practical.

- 162 Responses



Conclusions

The threads which emerged through all of the public input leaned heavily toward preserving the character of the campus while moving toward a better balance between pedestrian and vehicular design aspects and increasing the amount of open space or athletic fields.

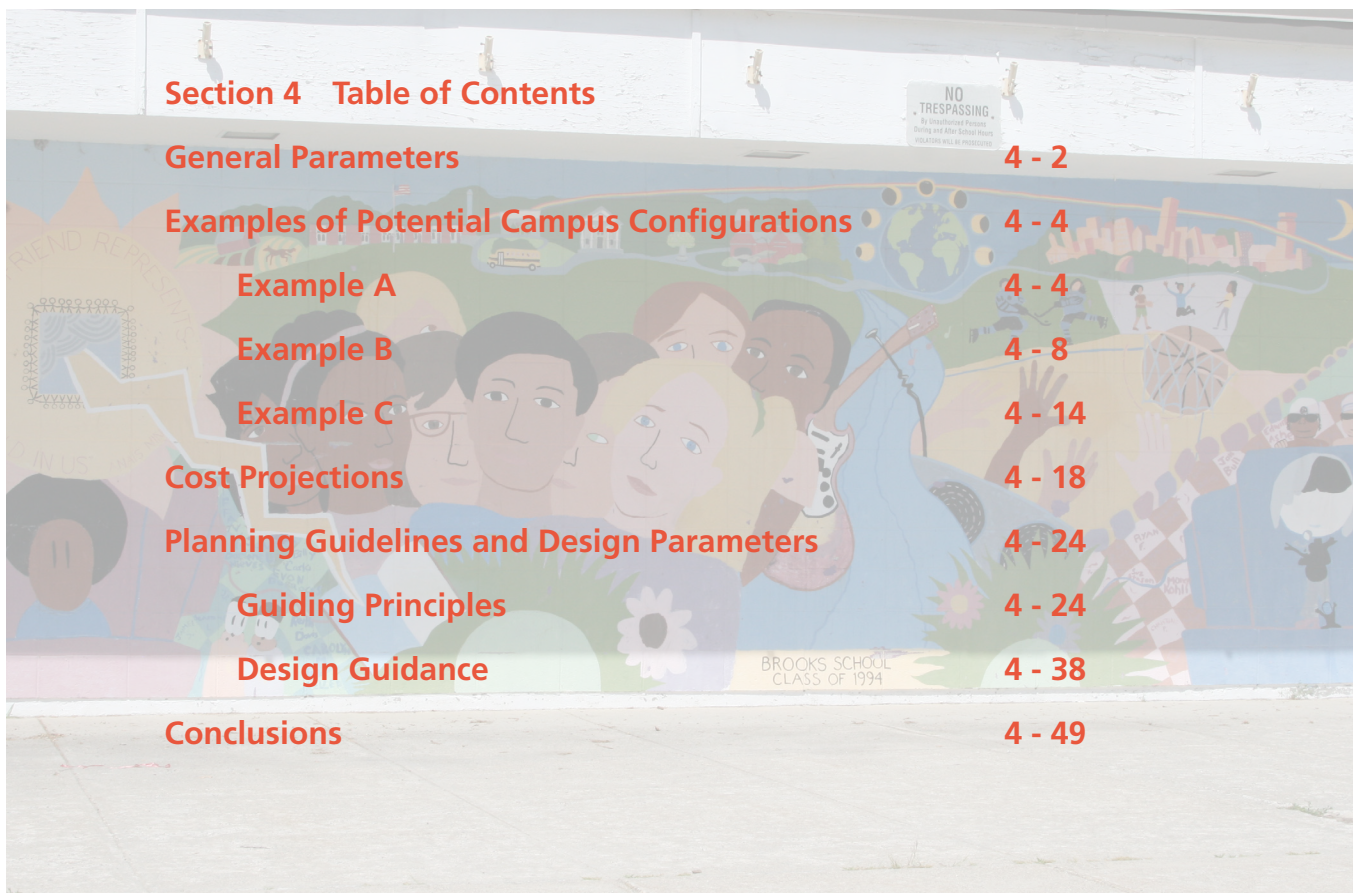
The input from all of the public sessions was used as the basis for gauging each of the three examples of a notional campus arrangement reviewed in the next Section of this study. By utilizing these responses and combining them with the engineering parameters developed earlier in the planning effort, the three examples in the next Section can provide insight into the potential direction of the campus and guidance as to how certain aspects may be achieved.



SECTION 4 - POSSIBILITIES OF A CAMPUS FOR THE COMMUNITY

The CMPC was charged with identifying how the various component pieces of future projects might fit, both individually and as a group, onto the campus.

These inter-related aspects were brought together by the committee in a series of study examples, each intended to provide insight into the potential of the campus and prompt a more in-depth discussion in projects which may follow.



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GENERAL PARAMETERS

Working from the engineering parameters previously established and input received through the public engagement efforts, the CMPC agreed that the campus could be considered as three separate areas for initial planning efforts. From this starting point a number of potential approaches to the Hartwell and school areas were explored. Changes to the Codman area were not explored, given the functionality of the current improvements along with the constraints of that area. Ultimately six potential arrangements of the Hartwell area were developed, along with four potential arrangements for the school zone / center field area.

With these the CMPC created three notional examples of how the campus may evolve. It is important to bear in mind that individual approaches can be further mixed and matched, and that these examples provide just one combination of each. Each of these potential arrangements can be seen as an interchangeable part of the campus as a whole. To highlight the overall potential of the campus as effectively as possible, three approaches to the location of a community center in the Hartwell area and three approaches to the renovation, renovation / addition, or replacement of the schools were selected.

To allow an informed discussion of the potential positive and negative aspects of each combination, the CMPC adopted broad guidelines for their review. These are predicated on the engineering parameters and input from the public engagement effort and have no ranking of importance relative to each other:

Fields and open space: Is there any gain in usable athletic or recreational field or open space; - is the footprint of any existing building reduced and the space made available for open space?

Pedestrians & Vehicles: Does the campus become more evenly focused between pedestrians and vehicles; that is - are walkways, crosswalks, bicycle paths and other pedestrian-centric aspects treated equally to vehicle related elements such as driveways, parking lots, and loading zones.

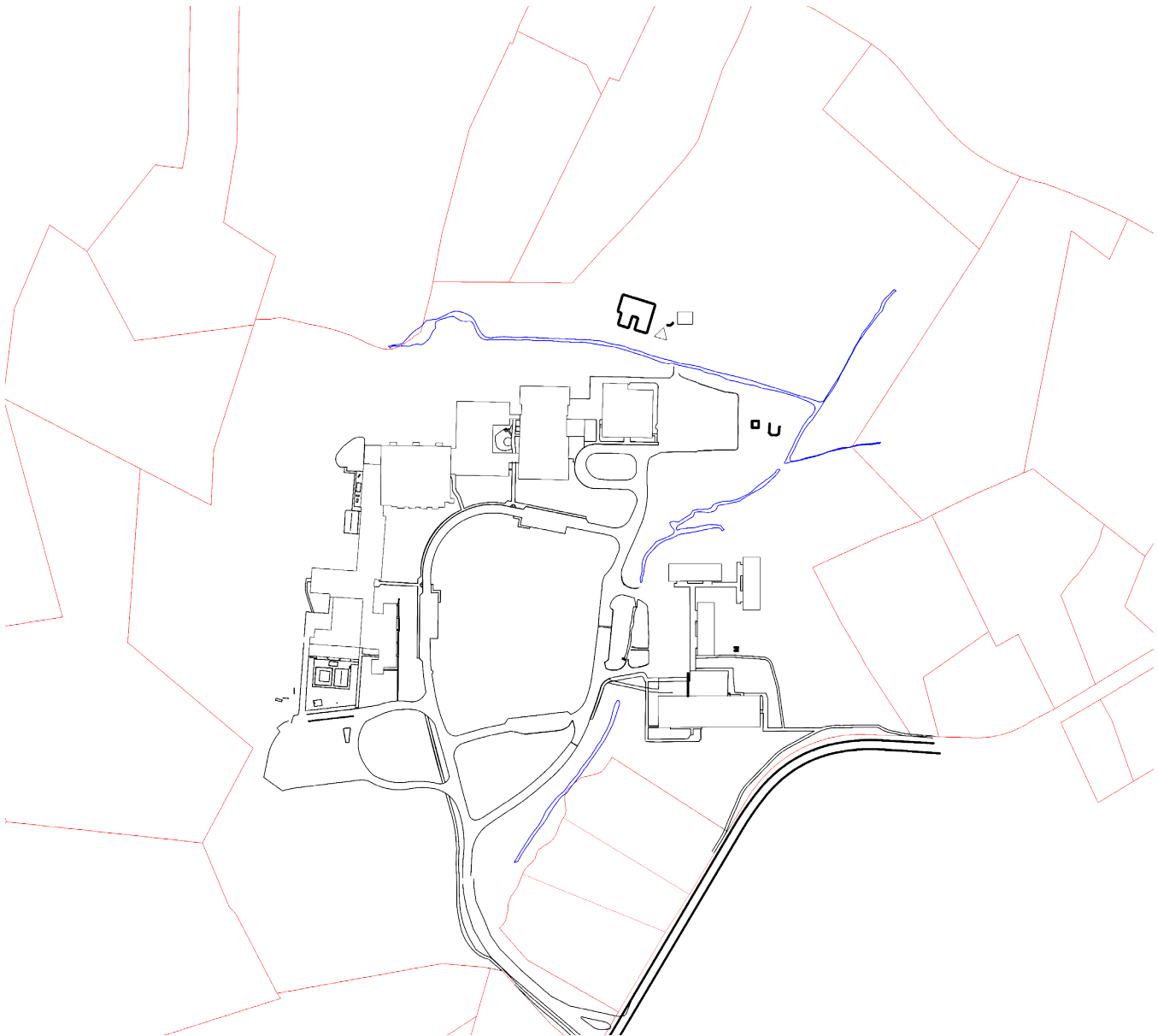
Character: Is any element that contributes to the character of the existing campus eliminated?

Regulatory: Does the arrangement serve to potentially decrease the impact or intrusion upon regulated areas?

Value: Does the approach provide the highest return on the Town's investment relative to appropriateness, functionality, and character?

The three examples were titled A, B, and C, with no ranking or importance attached to the title. Example A combined the approaches for the Hartwell area and the schools that provides the largest area for building footprints. Example B combined the approaches that allocated area for the building footprints that is slightly smaller than what is now existing for the schools. Example C combined the examples that most closely balance open space and building footprint.

The examples are each elaborated upon in greater detail over the following pages. Bearing in mind that the approach to any area of the campus may be combined with any other area approach, the intention of the examples is to illustrate what may be considered one conservative approach, one which borders on the furthest the Town may go, and one approach that is arguably mid-way between the others.



Example A

This example has the placement of a community center to the northern end of the Hartwell area. This is wooded area currently traversed by two footpaths that cross the stream to join the Hartwell area with the Reed Gym parking lot. This location provides the opportunity to utilize the topography and nature of this portion of the campus to enhance the integration of a community center into the overall site.

The parking for a community center and the Hartwell building would be located between the two structures and would likely mimic the grade changes and floor elevations of a community center, providing considerable at-grade parking for the seniors and others who use a community center.

In this example the zone designated for the school footprint closely follows the existing building, making it as large as reasonably possible. The existing relationship of the school buildings to the center field and to the un-built areas behind the school could remain substantially as it is now. The guideline building program could be accommodated on a single floor, if desired.

Fields and Open Space

By defining the school zone closely with the existing school footprint, the potential for addressing the desire for more and better athletic fields as a driver for decisions is reduced. By establishing the school zone to encompass the existing school footprint, it would be left to the building committee for the school to decide if any reduction in school footprint is accomplished.

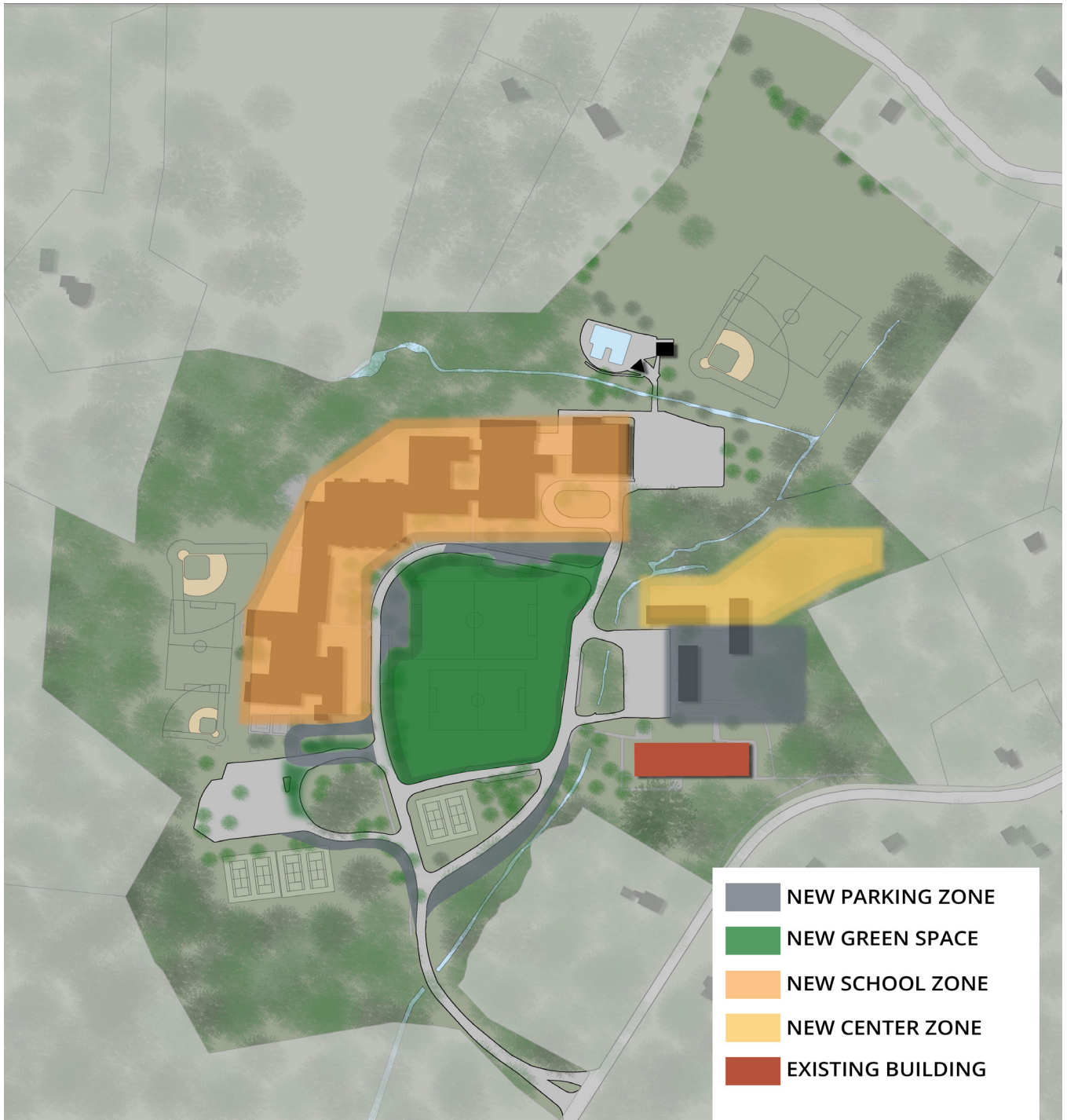
Given the limitations on expansion of the existing fields due to roads, buildings, or regulatory limitations, the improvements to fields in this example may be limited to leveling and regrading of the existing center fields.

Likewise, in the Hartwell area the location of the building and parking area in this example effectively preclude development of any substantial field or open space.

Pedestrian and Vehicles

Overview

Vehicle access/egress and circulation patterns would likely remain essentially unchanged on campus under this example. The site as envisioned would see very little substantial change to on-site vehicle patterns, and a community center would likely utilize the existing ingress / egress drives currently serving the Hartwell Building and the Pods.



Example A

School zone mirrors existing area, community center at north of the Hartwell area. Some potential for road or parking changes.

Pedestrians and Bicyclists

Refining and upgrading the pedestrian experience on the campus would be limited due to the retention of the majority of the existing roadways and pavement. If the loop road is relocated to parallel the southern face of the Brooks School, the sidewalk would move closer to the road and the building, rendering it less of a walkway and more of a sidewalk.

Creation of a wider, more pedestrian friendly walkway along the front of the Smith School is restricted in this example, as the location of the loop road in front of Smith School doesn't change, thus no additional area is freed up for a walk.

There is potential for a walk from a community center location, through the wooded area and over the stream to the loop near the Brooks School. With proper design and treatment this could be a very attractive walk and could potentially incorporate educational elements for the schools as well as inter-generational learning.

Consideration could be given to formalizing the walkway between the Hartwell area and the Smith School. As currently configured the desired line sees most pedestrians walk directly across the fields. It is possible to reconfigure the one way portion of Ballfield Road where it crosses the south end of the center field so that it's terminus is closer to the Smith School. If, as part of this realignment a pedestrian friendly walkway were constructed there may be an increase in the number of pedestrians who utilize the walkway instead of crossing the fields.

With the exception of the potential connection between the Reed Gym area and a community center area and the realignment of the roadway / walking route to the south of the center field, the pedestrian circulation patterns are likely to remain essentially unchanged on campus under this example.

Parking

The Hartwell area parking supply serves various demands over the course of the day and demand often exceeds available supply. Per Example A, an expanded supply of parking in the Hartwell area would support both existing uses and a community center. Locating a community center in the area north of the existing pods could allow the length of the connecting pedestrian path between the school buildings and a community center to be minimized.

Also, there would be an opportunity to designate pedestrian pathways through the Hartwell parking area to reduce vehicle/pedestrian conflict points. With a larger parking lot in the Hartwell area, there may be opportunities to designate/separate some parking spaces for specific users (i.e. visitors, staff) during certain times.

If the casual curbside parking activity around the center green was to be prohibited, the additional spaces in the Hartwell area could serve the displaced parking demand during community and larger athletic events that occur after school and on weekends.

Circulation

This example shows potential for only modest improvements in the flow of vehicular traffic on the campus overall. There is perhaps some opportunity to improve traffic flow and queueing in those areas near the schools. The bus staging area can be widened, a private vehicle drop-off / pick-up loop could be integrated at the south end of Smith School, and the bus loop could be reconfigured slightly along the front of the Brooks School.

Character

Retaining the existing school footprint as a starting point provides perhaps the most easily grasped approach to retaining the character of the campus as it pertains to the school. An approach that does not force the issue of reducing the footprint increases the opportunity for keeping as many of elements of the existing school as possible, regardless of the contribution they may make to the character of the campus.

The location of a community center in this example is perhaps a double-edged sword in regards to the character of the Hartwell area. The building footprint would cover the area where Pods B and C are now, but would also likely extend into the wooded area behind Pod C, eliminating a seldom used, but attractive woodland.

Regulated Areas

This example would likely not result in a reduction of impact regulated areas of any significance. Removal of the Pods would reduce the amount of impacted area, but that area is likely to be reconstituted within the footprint of a community center. With indeterminate future changes to the school, any further reduction to impacted areas is difficult to forecast.

There may be opportunity to reduce impact through design and construction of a community center. A green roof could help to offset impervious surfaces within the regulated zone, but many agencies do not see this as a 1:1 replacement.

Value and Options

In this example the zone designated for the school footprint closely follows the existing building, making the zone as large as reasonably possible. This would perhaps most readily facilitate a renovation of the existing building. While allowing new construction within the same footprint, accommodating swing space within the zone would be difficult if the entire existing school needs to remain in operation during construction.

This example might be characterized as the most conservative approach to addressing the needs of the schools. Within this zone it is possible, as discussed in the SBAC 2 report with Dore & Whittier, to undertake a wide range of improvements or renovations to the schools. This designated zone might best accommodate a phased approach to renovation of the school, useful in the event the MSBA does not invite the Town into its program, making the renovation a locally funded, potentially multi-phase project.

Example B

This example shows a community center placed along the western edge of the Hartwell area, approximately where the existing parking lot is now. This is very similar to one of the layouts contained in the final report of the Community Center Study Committee. The major difference between the Community Center Study Committee concept and this example is that the possibility of relocating Ballfield Road to the east side of the stream is shown for consideration. This would eliminate the two parking lot entrances and might provide not only a more easily understood vehicular connection but may also give opportunity for a stronger visual connection between the Hartwell area and the center fields.

The parking for a community center and the Hartwell building would be located behind a community center and would likely be a single grade parking for both the community center and Hartwell building occupants.

In this example the zone designated for the potential school footprint has been shortened on the southern (Smith School) end. This would result in a slightly wider zone to allow the required leeway when time comes to design the school. This zoning would fairly readily facilitate a renovation of the majority of the existing building, while requiring some new construction to replace program area that is lost within the existing building. In this example the new school could still be a single floor building.

Fields and Open Space

By shortening the school zone there is potential for more and better athletic fields. Removing the two tennis courts at the south end of the center field, combined with realigning Ballfield Road and filling / leveling the center fields yields a new 6 V 6 soccer field.

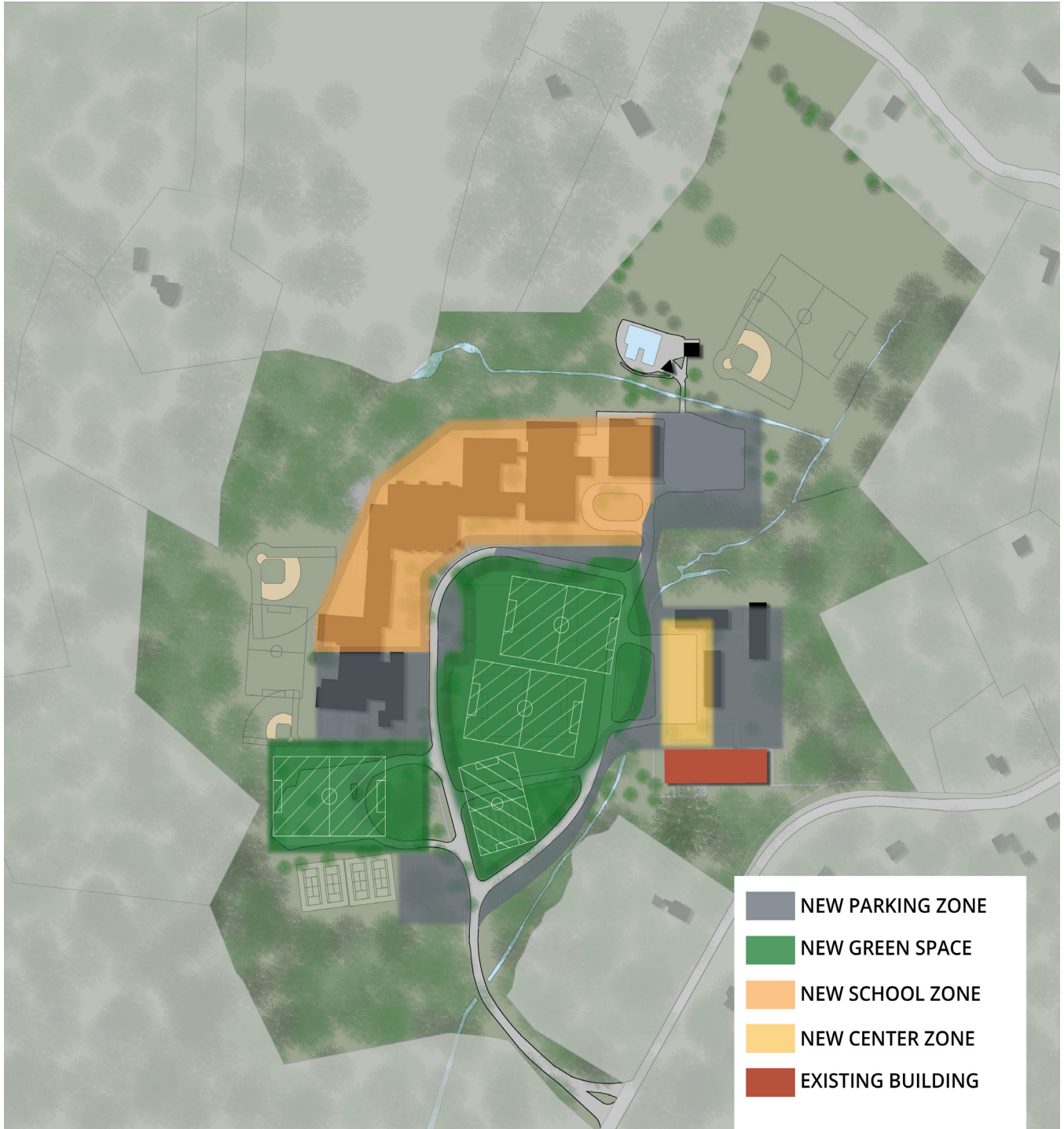
Splitting and rearranging the parking to the south of the Smith school provides space for a second additional rectangular play field as well.

As with Example A, in the Hartwell area the location of the building and parking area in this example effectively preclude development of any substantial field or open space, however, this building location would most likely avoid substantial clearing in the wooded area to the north of Pod C.

Pedestrian and Vehicles

Overview

This example shows potential for more improvements in the flow of vehicular traffic on the campus overall when compared to Example A. The relocation of Ballfield Road to the east of the stream would likely simplify travel along the main roadway. There is also opportunity to improve traffic flow and queueing in front of the schools. The bus staging area can be widened, two parking lots could be built at the south end of Smith School, and the bus loop could be reconfigured slightly along the front of the Brooks School.



Example B

School zone slightly shorter and wider, community center at west side of the Hartwell area. Ballfield Road moved to the east, parking adjacent to school at south end. Moderate potential for alterations to roads and parking.

Pedestrians and Bicyclists

In a way similar to Example A, the opportunity to refine and upgrade the pedestrian experience on the campus would be limited under this example. If the loop road is relocated to parallel the southern face of the Brooks School, the sidewalk would move closer to the road and the building, rendering it less of a walkway and more of a sidewalk.

The potential to create a wider, more pedestrian friendly walkway along the front of the Smith School is restricted in this example, as the location of the loop road in front of Smith School doesn't change, thus no additional area is freed up for a walk.

Perhaps the greater potential for improving the pedestrian experience is in the Hartwell area and associated with location of a community center. Relocating Ballfield Road opens the eastern edge of the center fields for a defined walking path that would be segregated from traffic by the stream. It is also possible to develop a walkway through the wooded area and over the stream to the loop near the Brooks School. With proper design and treatment this could be a very attractive walk and could potentially incorporate educational elements for the schools as well as inter-generational learning.

With the expansion of the center fields to the south, the walkway from Hartwell to Smith is made less convenient. Consideration could be given to an informal walkway across the field, perhaps with design features that could be utilized by the soccer clubs and players as well.

Parking

An expanded supply of parking in the Hartwell area would support existing uses and a community center. Locating a community center where the existing Hartwell parking lot is now would minimize the pedestrian path length between the central green and the community center.

Locating the parking for a community center behind the building could reduce conflicts between vehicles and pedestrians. With a new lot, there would be an opportunity to incorporate pedestrian pathways through the parking lot to reduce vehicle/pedestrian conflict points. While the new lot would also serve the parking demand generated by athletic events on the central green, it may not be readily apparent that there is available parking behind the building. With more parking in the Hartwell area, there may be opportunities to designate/separate some parking spaces for specific users (i.e. visitors, staff) during certain times.

A new athletic field south of the Smith School, potentially placed where the existing lot is today, could create the opportunity for new parking both north and south of the field. The parking area north of the green would provide convenient, visible parking for visitors to the central green and the new field. This lot would also conveniently serve school activity.

A smaller parking area south of the new field would support parking demand associated with the tennis courts, but because it would be removed from the school buildings, this parking area might be under-utilized during the school day.

With redesign of the parking supply near the Smith School/tennis courts, there are opportunities to designate new pedestrian pathways, reduce vehicle/pedestrian conflict points, separate some parking spaces for specific users (i.e. staff/visitors) during certain time, and create a better organized parent drop-off/pick-up zone.

With the central green shifted to the east, there is potential to realign the internal roadway along the east side of the central green to create a more visible and direct connection to the Reed Gym lot.

The lot at the Reed Gym could be expanded to provide additional parking for visitors to the central green and the schools. A larger lot at the Reed Gym could create the opportunity for a more organized Brooks school drop-off/pick-up zone, where parents would enter a moving queue and students would be dropped off in an orderly manner.

As part of the lot redesign, new pedestrian pathways through the parking could be incorporated to reduce vehicle/pedestrian conflict points. Some parking spaces could be designated for specific users (i.e. staff, visitors).

Circulation

With improved parent drop-off/pick-up zones at the Reed Gym and Smith parking areas, it is possible that the loop road in front of Brooks/Smith schools could be designated for bus traffic only, at least during certain times of the day. Separating the parent vehicle activity from the bus activity can reduce conflicts between pedestrians and vehicles.

With the expansion of recreational space near the Smith School/tennis courts, the adjacent parking area would directly serve the increased athletic activities, again reducing some vehicle/pedestrian conflict points.

Character

Reducing the school zone in this example may not lead to a reduction in the school footprint, as there may not be enough benefit to building upward to justify the change within the school culture that such a move brings. For that reason there exists the potential to continue the contribution of the current building arrangement to the character of the campus. It is likely that some new character elements will be required in the vicinity of the school and these represent both an opportunity and a challenge.

The location of a community center in this example gives great potential to unite the Hartwell area with the center campus. The location of a community center to the west side of the Hartwell area would put it adjacent to the realigned Ballfield Road and provide tremendous design opportunities for creating a new character to the east side of the campus.

Value and Options

In this example the zone designated for the potential school footprint has been shortened on the southern (Smith School) end. This would result in a slightly wider zone to allow the required leeway when time comes to design the school. This approach would likely require some new construction, but the amount required could be adjusted in response to budgets or schedule.

This example can be characterized as the middle ground relative to the school buildings. As shown this anticipates the footprint of the school becoming shorter, and in the illustration that length is taken from the southern (Smith) end of the building. It could be taken from the eastern (Reed) end of the complex as well. Either approach requires a careful weighing of the potential positive and negative effects on the educational appropriateness, administrative protocols, interplay of the built and un-built elements of the campus, and any historical or sentimental value attached to the buildings.





Example C

This example takes the most deliberate approach to reducing the school zone in length, working with the Library Link Building and the Auditorium as the two anchor points for a new school configuration. In this example a school with some two story portions is a likely approach.

This example provides considerable flexibility in the approach to the Hartwell area as well. A community center is placed to the eastern portion of the site, which would require the overhead power lines be addressed. Ballfield Road crosses the stream and the parking area is between the Hartwell building and a community center.

Fields and Open Space

The consolidation of the school footprint provides the opportunity to fully rebuild the center fields. By leveling the area once the loop road is removed, two 11 V 11 soccer fields and one 6 V 6 field can be constructed, along with a T-ball field. For the first time in any of the examples, all of the fields can be oriented in the most desirable direction for competitive play.

The creation of two new soccer fields presents for the first time the potential for some of the soccer fields to be rested through a season to promote turf regeneration.

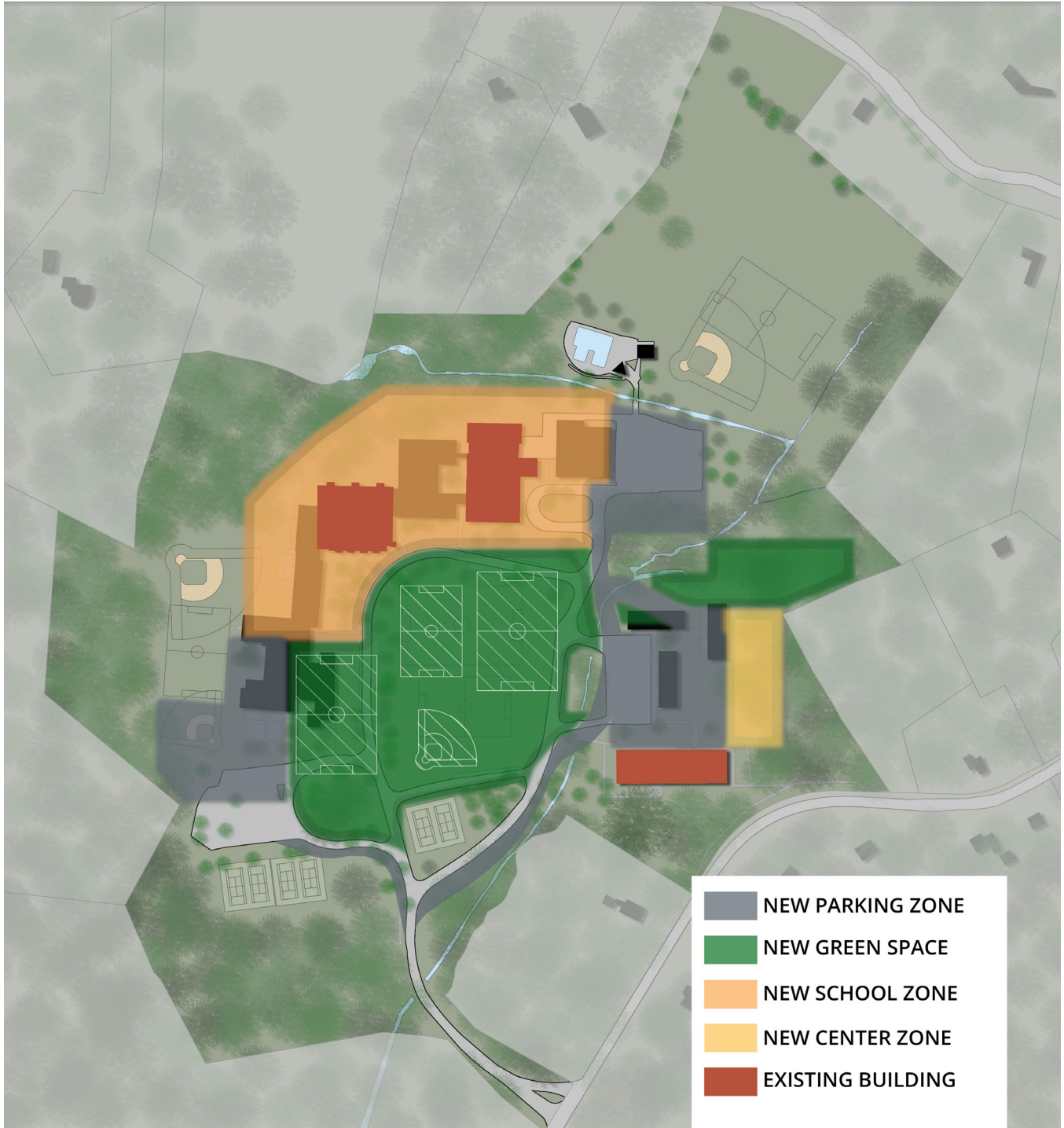
Differing from the two previous Examples, in the Hartwell area the location of the building and parking area in this example allows consideration for development of a lawn or open space to the north of the building, where it would flow into the wooded area to the north of Pod C.

Pedestrian and Vehicles

Overview

This example shows potential for significant improvements in the flow of vehicular traffic on the campus overall. The concept drawing shows Ballfield Road running to a cul-de-sac in the area of the Reed Gym and a spur road going to a second cul-de-sac at the south end of the school. The loop road in front of the school is eliminated, and bus drop-off / pick-up takes place at either end of the school.

The potential to align the campus with the pedestrian and student spaces is very strong in this example. The elimination of the loop road opens a considerable area for a well designed walkway, with the potential for landscape elements, picnic areas, and outdoor learning opportunities.



Example C

School zone shortest and widest of all three example approaches, community center at east side of the Hartwell area. Loop road eliminated, Ballfield Road realigned to the east of the stream. Substantial potential for new fields and pedestrian connections.

Pedestrians and Bicyclists

Removing the loop road provides the strongest connection between built and un-built elements and also presents the opportunity to transform this connection into a pedestrian focused environment. With no motor vehicles in the area, the chance to establish not only walkways but landscape features, learning opportunities, and gathering places is unmatched.

Similarly, the placement of a community center to the eastern side of the Hartwell area provides opportunities to tie the walking paths to the sidewalks along Lincoln Road as well as to the Reed Gym area and to the center fields as well.

Parking

Under this plan, parking supply would be maximized and concentrated in the Hartwell area, the Reed Gym area, and the Smith School/tennis courts area. With the expanded recreational facilities on the central green, some existing parking along the internal roadway would be eliminated and relocated to the new, larger parking areas.

If a community center is built on the east side of the new Hartwell parking area, the pedestrian path from the community center to the recreational fields would be longer than envisioned under Example B. An advantage with having the parking lot in front of the community center (as opposed to behind), is that drivers destined to the central green would have a shorter walk from the parking area.

The new parking area adjacent to the Smith School/tennis court would directly serve the expanded athletic green space.

Circulation

With the central green shifted to the east, there is the opportunity to realign the internal roadway along the east side of the central green, creating a more visible and direct connection to the Reed Gym lot. The pedestrian path length between the central green and the Reed Gym lot would be shortened, which could encourage more parking activity in the Reed Gym lot during athletic events.

The loop road in front of the school buildings may be eliminated to maximize the central green space and enhance the pedestrian connections (reduce conflicts) between the front of the school buildings and the green. As an alternative to full closure, the loop road segment could also be paved in a different material and restricted to buses only.

Eliminating general vehicle traffic along the loop road in front of the school buildings would create an internal roadway network where each side of the campus operates somewhat independently. Vehicles from the Reed Gym lot could no longer travel in front of the schools and would exit the campus via the east side of the central green.

The existing one-way westbound (exiting campus) connecting road along the south side of the central green could also be eliminated. The existing one-way (entering campus) connection from Ballfield Road toward the Hartwell area could be widened to accommodate two-way travel. This change to the internal roadway network could create longer travel paths for some drivers, such as parents who must navigate between the two schools (have children in both schools).

Character

This example would focus future committees on the decisions regarding how best to integrate the limited area of the existing school into a new facility and from that effort in deciding how the reconfigured building can establish the character of the new campus.

The location of a community center in this example provides significant opportunities to create a distinct character for the Hartwell area, as, with this placement, both a community center and the Hartwell Building will be visible in one view.

Regulated Areas

This example would likely result in a considerable reduction of impact regulated areas. Realignment of the roads and relocation of the parking lots moves a considerable amount of impervious surface out of the regulated areas.

In the same way, placing a community center to the eastern side means all of the new building will likely be out of the regulated zones.

Value and Options

In this example the zone designated for the school footprint is the most condensed. This will likely lead to a two story building, which may provide some economies in construction and administration once completed. This zone size would narrow options for reuse of various portions of the existing schools and thus not be as applicable perhaps to a scheme in which MSBA funding is not secured to offset some of the school construction costs.

This example might be characterized as the most liberal approach to addressing the needs of the schools. This designated zone might best accommodate a phased approach to renovation of the school by making some of the existing school potentially available for swing space once the new portion has been completed.

Cost Projections

One element of master planning that elicits opinion and often controversy is the debate regarding the inclusion of cost projections. In many planning studies the concept of cost is irrelevant as the objective of master planning is to provide guidance on a much higher level.

It was integral to the charge to the CMPC that some projected costs be identified that could be used to inform the discussion of potential next steps for the Town. Though this may have been difficult for a planning effort that specifically excluded building design, Lincoln is fortunate in having the recently completed work of both the SBAC 2 and Community Center Study Committee, each of which contain cost projections for their respective building options. With this information available, it was left only to identify and provide estimates for aspects of the campus development that may fall outside of either of those projects.

This task, however, is complicated by the fact that there are a number of different approaches to each element. The challenge is to identify a scope of items broad enough to produce a representative range of price projections to allow a well-rounded discussion of potential costs.

It was felt that each of the building projects would include the site work appurtenant to their scope, such as parking lots and drainage, but would likely not include roads, common fields, and utility service lines, for example, so a cross-section of those items was developed and priced.

In an effort to provide the greatest level of flexibility for planning, there were variations or alternate approaches identified and priced within each element category. The costs that are included below are 2015 cost projections and do include soft costs, being construction and owner cost projections. It must be borne in mind, however, that these cost projections are for 2015 and at the time of this writing it is suggested that they be increased 5% per annum, compounded, for each calendar year covered in forecasting costs.

All of the component items can be categorized as site related costs, and were grouped as shown on the pages that follow.

Fields

Field work (grading, fill, seeding) of existing fields, not to include clearing, grubbing, or mass grading:

Limited scope, aligned with Example A -

Provide 4" of loam over 110,000 square feet (roughly one half) of the approximately 221,800 total area of the fields. This totals 1,344 cubic yards of loam which is to be purchased, delivered, spread, leveled, seeded in a manner suitable for a soccer field over portions of the current Center Field

Projected Cost \$180,000

Broader scope, aligned with Example B -

A new small field at the south tip of the center fields with approximately 280,000 SF total surface area. Provide 12" of sub-surface material over 70,000 square feet for a total of 2,592 cubic yards of sub-surface material purchased, delivered, spread, leveled in a manner suitable for the sub-surface of a soccer field. Provide 4" of loam over 180,000 square feet for a total of 2,200 cubic yards of loam which is to be purchased, delivered, spread, leveled, seeded in a manner suitable for a soccer field. Relocate 200 lineal feet of 22' wide roadway with curbing on one side only. Demolish and remove two (2) clay tennis courts.

Projected Cost \$430,000

Broadest scope, aligned with Example C -

Expand the Center Fields to the west, close the loop road, move roadways, impacting approximately 225,000 SF total surface area. Provide 24" of sub-surface material over 110,000 square feet for a total of 8,148 cubic yards of sub-surface material purchased, delivered, spread, leveled in a manner suitable for the sub-surface of a soccer field. Provide 4" of loam over 225,000 square feet for a total of 2,750 cubic yards of loam which is to be purchased, delivered, spread, leveled, seeded in a manner suitable for a soccer field. Demolish and remove 600 lineal feet of 22' wide roadway with curbing on one side only.

Projected Cost \$830,000

Roads

The condition of most of the roads and parking lots on the campus is poor and if no other work is undertaken in the next five years the Town should begin capital improvement planning to address the roads. For the purposes of the planning study the team did a take off of the approximate area of paved road and parking lot and then generated cost projections as follows.

Total paved road length is approximately 4,380 LF, or 0.83 mile. The total surface area is approximately 114,000 square feet. The scope of work was priced with and without curbing:

Scarify the wearing course of the existing paved areas, place a 3" binder course of asphalt after any sub-surface or base repairs have been completed and place a 2" wearing course of asphalt.

Projected Cost with curbing \$1,300,000

Projected Cost without curbing \$900,000

The total area of paved parking is approximately 127,000 SF, or 2.9 acres. A scope similar to that for the roads was followed, with the exclusion of curbing.

Scarify the wearing course of the existing paved areas, place a 3" binder course of asphalt after any sub-surface or base repairs have been completed, and place a 2" wearing course of asphalt.

COST \$950,000

In the eastern portion of the Reed Lot there is a depressed area that is understood to be an old ice skating rink. This area is approximately 17,000 square feet in total surface area and to bring it level with the rest of the parking lot would need to be filled with 12" of process material, compacted to serve as pavement sub-grade.

Projected Cost \$35,000

There are also storm drain structures in the lot and the cost to raise one storm drain by 12" above current rim elevation was estimated.

Projected Cost \$2,000

Curbing

Typically part of roadway construction, but not integral to the current design part of the campus, is curbing. To allow flexibility in planning, the amount of existing curbing was estimated and cost for asphalt, concrete, and granite curbing was obtained.

Pricing guideline: remove 1,530 LF of a mix of concrete and asphalt curbing and replace with:

- a) Asphalt curb COST \$22/LF
- b) Concrete curb COST \$35/LF
- c) Granite curb COST \$56/LF

Sidewalks

The inclusion of sidewalks both on the existing campus as well as on a future campus is critical to the character of the campus. There is currently approximately 4,500 LF, or 11,000 SF of a mix of concrete and asphalt sidewalks.

Costs were developed for removing all of the existing and replacing it in its current location and configuration with concrete walks. The existing walks average about 2 1/2 feet in width. For cost projection purposes the new walks were done at an average five feet (5') wide, so total square foot replacement will be 22,500.

Projected Cost \$290,000

Electrical services

The overhead power lines limit potential development of some areas of the site and pose an exposure to power outages and damage. Price projections were run for two scenarios to run the primary service, telephone and data all underground. Currently the campus is fed from two points via overhead poles.

Approach #1 is to keep both service entry points, thus Behind the Hartwell building serving Brooks School – 975 LF and serving Smith School – 1,040 LF.

Projected Cost \$550,000

Approach #2 is to provide a single main service in public roadway – this would be 1220 LF to connect to current underground line in front of Smith, from this demarcation point there would be two (2) 800 LF runs to service Hartwell and Brooks.

Projected Cost \$700,000

Building Costs

The efforts of the SBAC 2, which concluded its work in February 2015, developed a number of different approaches to repair, renovation, partial or total replacement of the schools. As part of that effort there were associated cost projections developed for each potential approach to the Town's school facility needs as well. Town Meeting in March 2015 endorsed the preference for a comprehensive school renovation project, which has a minimum projected cost of \$30,000,000.

The highest projected cost for a school was for complete replacement, which is not contemplated in any of the three examples contained within this Master Planning Report. Thus, for cost projection purposes, the two costs that most closely align with each example were selected from the SBAC 2 report and included in the overall cost projections.

Similarly, the Community Center Study Committee's efforts that were presented in February, 2015 as well contained cost projections for each of the different concepts contained within the report. For cost projection purposes for this Master Planning Report, the low and high costs that are attributable to the concept which places a community center in the Hartwell area of the campus were selected from the Community Center Study Committee report and included in the overall cost projections.

Summary of Potential Costs

The number of potential scenarios that might be construed on the campus is relatively narrow. To allow an ongoing discussion, the graph on the following page shows the cost projections from the SBAC 2 and Community Center Study Committee reports, as described above, along with cost allocations for site components, as detailed previously.

To develop the projected costs shown at the bottom of the graph, the low projection costs were added to yield what is considered to be a sound low-end budget. For the high-end budget the higher projected costs for each building were added to the highest projected material costs. When totaled this provides the high projection cost for each example.

Caveats to the Summary of Potential Costs

The cost projections given within this study are a compilation of cost projections from a number of different sources and places in time. Though all of the costs have been developed by independent cost estimators, each was not aware of all of the potential projects that may be considered.

The costs do contain owner's costs and other related soft costs, but do not contain a uniform escalation allowance, if any at all. These projections should be considered for a preliminary or broad planning effort only, and a more detailed and in-depth estimate must developed prior to borrowing or committing to a project or course of action.

	Example	Existing	Example A	Example B	Example C
Item					
School Building ¹	Low projection	\$30,000,000	\$30,000,000	\$54,700,000	\$54,700,000
	High projection	\$47,600,000	\$54,700,000	\$55,800,000	\$58,800,000
Community Center ²	Low projection	\$0	\$10,400,000	\$10,400,000	\$10,400,000
	High projection	\$0	\$15,000,000	\$15,000,000	\$15,000,000
Site Components ³					
Athletic Fields		\$180,000	\$180,000	\$430,000	\$830,000
Roads		\$900,000	\$900,000	\$900,000	\$1,300,000
Parking		\$950,000	\$950,000	\$950,000	\$985,000
Curbing	Asphalt	\$33,700	\$33,700	\$51,000	\$105,000
	Concrete	\$53,550	\$53,550	\$75,000	\$120,000
	Granite	\$85,650	\$85,650	\$120,000	\$180,000
Sidewalks		\$142,000	\$142,000	\$290,000	\$290,000
Electrical service	Bury Existing	\$550,000	\$550,000	\$550,000	\$550,000
	New	\$700,000	\$700,000	\$70,000	\$70,000
Projected Cost	Low projection	\$32,755,700	\$43,155,700	\$68,271,000	\$69,160,000
	High projection	\$50,407,650	\$72,507,650	\$74,040,000	\$77,455,000
Note 1	Cost projections based on the 2015 SBAC 2 Study as accepted by the School Committee				
Note 2	Cost projections based on the 2015 Community Center Committee Study				
Note 3	Cost projections from the 2015 Campus Master Plan Study				

The cost projections for the lower range expenditures for the school are the accepted minimum costs for improvements to the school as accepted by the School Committee. It was agreed that this represents the level of investment that addresses the physical needs of the buildings and as well as the most rudimentary educational improvements.

It must also be borne in mind that the projected costs for a school project DO NOT reflect any potential contribution from the MSBA or any other program. Likewise, the projected community center costs DO NOT reflect any grant or other funding program that may reduce the Town's financial burden.

GUIDING PRINCIPLES

In developing the foregoing examples, the CMPC was attentive to the basic doctrine of understanding what has been learned before moving ahead. At each step of the process, time was dedicated to compare what had just been accomplished and what was about to begin, with the charge to the Committee and the over-arching atmosphere and feelings of the residents. Throughout the research and writing of this planning report, three guiding principles remained paramount to the committee and consultant team:

Solicit and incorporate input and opinion from the public

The CMPC members provide a cross-section of the Town of Lincoln residents. However, inherent in the protocols of the CMPC from the beginning was to be intentionally open and engaging with the entire Lincoln community. Through these engagements three consistent trends emerged 1) there is a strong desire to provide the students of Lincoln with the best educational environment possible, 2) many feel very strongly that the campus is and must remain a community centered asset, and 3) that the connection between the built and un-built environment is a central element of the nature and character of the campus.

Abide by the underlying facts and conditions

The Ballfield Road campus has continuously evolved from its start as a baseball field to the latest iteration enjoyed by so many from within and outside of the Town of Lincoln. However, as now configured, the campus is constrained through regulatory controls, has limitations related to vehicular and pedestrian traffic, and will need attention given to the utilities that support the operation of the campus.

Accommodate the requirements of programs and agencies;

The fundamental concept behind master planning is to NOT design a building or landscape, but rather to identify as many potential paths, requirements, influences, and impacts as possible within the parameters of the study, and to place them within a single document so that their individual power to affect the future can be seen in company with, and in contrast to, each other.

For the Campus Master Planning effort, this means recognizing the desire for improved school facilities, and the requirements of the Massachusetts School Building Authority; incorporating the desire for a community center on the campus; and being cognizant of the very real limitations of time, money, and patience of the Town of Lincoln residents.

Solicit and incorporate input and opinion from the public

Through the various committee meetings and public engagement opportunities, several trends emerged. These can be seen to represent the desire of those who attended the meetings and endeavored to make their opinion heard. To provide the best opportunity for a plurality of ideas and opinions, the committee was deliberate in its selection of venues, size, and approach. Beginning with a fairly unstructured outreach effort and culminating in a very focused and directed engagement at the State of the Town, each opportunity to gather input was embraced and maximized.

From the four forums that preceded the State of the Town several strong themes emerged. These themes echoed the ideas and concepts the committee members had expressed during their work. In many ways these themes followed closely along with those gathered during the SBAC 2 and Community Center Study Committee efforts:

General conclusions drawn from public forum feedback

- Maintaining the connection to green (whether the Center Field or other) is a priority.
- Maintaining the community aspects of campus, alongside the educational uses is important.
- Residents who are familiar with campus perceive a lack of parking across campus.
- Parents, educators, and concerned residents hold a strong desire for a modern school building.
- Removing the Pods to make way for newer buildings or parking has wide support.

Abide by the underlying facts and conditions

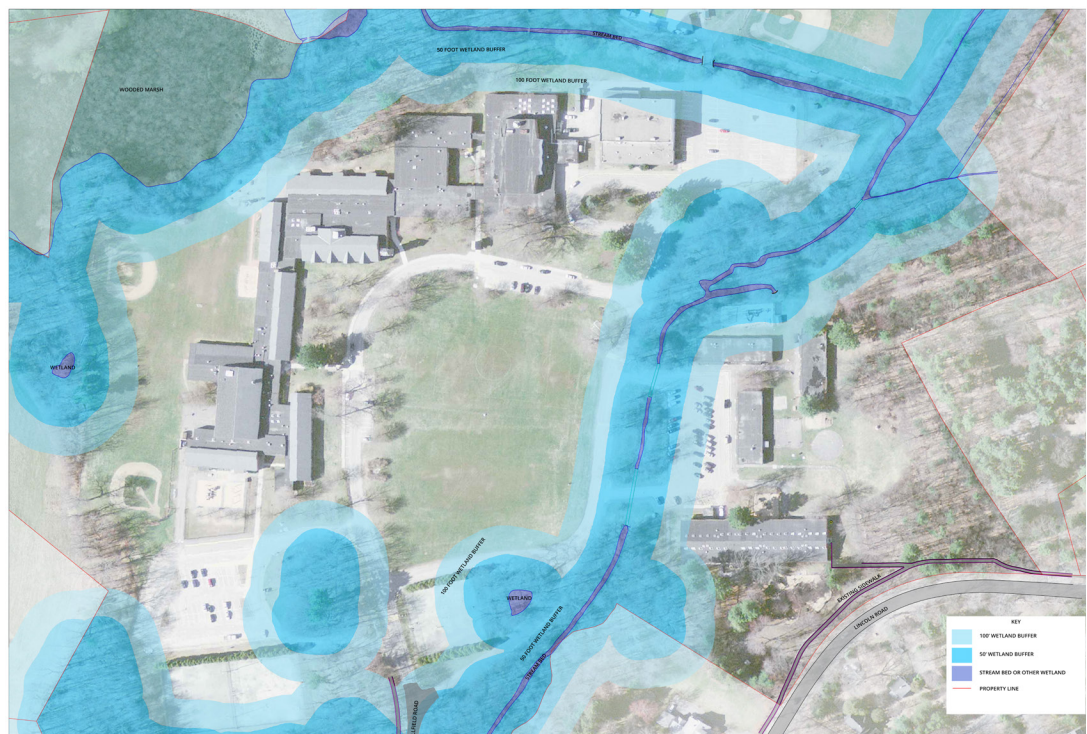
Developing examples of paths toward a campus of the future requires recognition of the regulations and physical conditions that may prove to be limitations to some future planning or design initiatives. The Ballfield Road campus is perhaps most influenced by three underlying aspects: regulatory controls of wetlands and riverfront areas, traffic and parking, and utilities.

Each of these will constrain future efforts to some degree, but while they present constraints, there is also potential for a better campus within each.

Wetlands and Buffers

The Wetlands Protection Act is overseen on the state level by the Department of Environmental Protection (MassDEP) and administered locally the conservation commission. The Act regulates many types of work in resource areas, including vegetation removal, regrading, and construction of buildings, additions, and impervious areas, which entail work in a wetland resource area or within 100 feet of a wetland (the buffer zone). In addition to the State Wetlands Protection Act, if required by the Lincoln Conservation Commission the Lincoln Wetlands Protection Bylaw may also impose a naturally vegetated buffer strip a minimum of 50 feet in width (100 feet in the case of riverfront).

In the current configuration, the majority of the wetlands areas on the site are substantially outside of the built areas. The riverfront setback areas are also regulated through the Wetlands Protection Act, conservation commission and MassDEP. The riverfront zone on the campus is limited to a portion of the north-south running stream. The west-east flowing stream does not appear to meet the all the necessary criteria for a riverfront zone.



State regulations limit degradation of sites within riverfront setback zones to 10% of the total riverfront zone located on the site, resulting in a regulated limitation of 2.69 acres that can be degraded. As currently configured, approximately 4 acres of the riverfront setback zone is already degraded through impervious surfaces such as pavement or buildings.

Mitigation of the impacts within the regulated areas should not be at odds with the development of a new campus, in the interest of proper environmental stewardship, planning for the future campus should re-mediate the overage of degraded area within the riverfront setback as much as possible. The success of this effort overall will depend upon a commitment to this cause by all future committees and by the Town and residents in the everyday use of the campus as well.

There are many steps that can be taken to reduce the wetlands and riverfront zone impacts. These include reducing the amount of impervious surface, improving degraded areas through ecologically appropriate interventions such as trash clean-up efforts, invasive plant eradication, construction and maintenance of environmental learning nodes, among many avenues.

As the most basic step, it must be borne in mind that future projects may not be able to make the impervious area larger, but it may be possible to redevelop the already degraded areas, or to swap areas, i.e. put in new impervious areas, but remove "old" impervious to keep the total at current amount of four acres. Any and all approaches to the regulated areas must be explored with the regulating body when the time comes to begin planning for a future project.



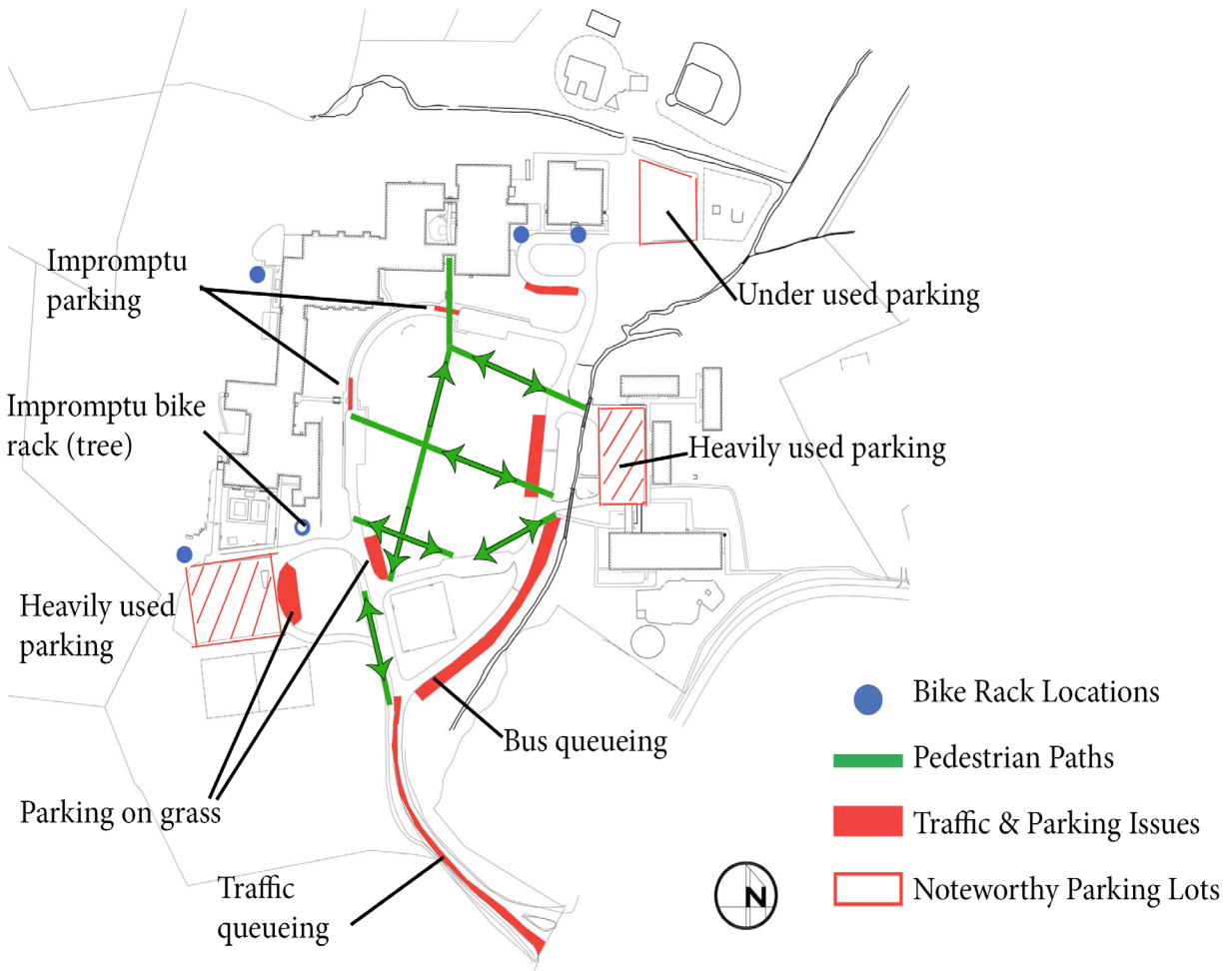
Vehicles and Pedestrians

The circulation of vehicles and pedestrians upon the campus is in some ways remarkably controlled and, in others, fairly unrestrained. Given the size of the campus and the number of concurrent uses that take place, a systematic approach to circulation travel is likely to reap many benefits.

On-site observations and conversations with teachers, administrators, and parents confirm that the desire line of pedestrians on site doesn't correlate with the sidewalks or paths. These same information gathering efforts also confirm that parking and vehicle travel is contributing to a number of issues and concerns on the campus.

The introduction of a community center onto the campus has the potential to increase the occurrence of these situations, either by separating the campus into two distinct areas and thus concentrating the problems, or by unifying the campus and thereby compounding the issue.

Campus overview - on-site observations



Vehicle travel and parking is an area that can be identified at the planning stage and addressed in detail during subsequent projects. The existing entry road effectively calms traffic due to the width, physical alignment, and surrounding trees. The parking lots, though adequate for most of the current uses, are not as successful in encouraging proper use and respect for traffic laws.

To have the highest likelihood of successful use, parking facilities must be located within convenient walking distance of the destinations they serve. Acceptable walking distance are dependent upon a number of factors, each of which must be considered in the planning and design of a campus or facility. The table below shows generally acceptable walking distances between parking facilities and destinations.

Acceptable walking distance is also affected by climate, line of site (longer distances are acceptable if people can see their destination), "friction" (barriers along the way, such as crossing busy traffic), and by the type of activity and user, as shown in the table below. This table indicates maximum acceptable walking distance from parking to destinations for various activities and users and from this some planning ideas may begin to form.

Level of Service	A	B	C	D
Conditions				
Climate Controlled	1,000 ft.	2,400 ft.	3,800 ft.	5,200 ft.
Outdoor/Covered	500	1,000	1,500	2,000
Outdoor/Uncovered	400	800	1,200	1,600
Through Surface Lot	350	700	1,050	1,400
Inside Parking Facility	300	600	900	1,200

("How far should you walk?" Smith / Butcher, 1994)



The usable parking supply serving a destination can often be increased by improving pedestrian access. Improving a sidewalk or path, developing a shortcut, adding shade or rain covers along walkways, improving personal security, and aesthetic improvements can expand the range of parking facilities that serve a building or area. Users usually prefer the closest possible parking location, but given a choice, motorists sometime prefer to park further away to reduce the potential for scratches or dings to their car, for the enjoyment of walking, or to avoid traffic congestion when leaving.

Various studies have contributed to a better understanding of the desire and aptitude of a driver to park in a particular location. More importantly, this information allows planners and designers to anticipate how a particular parking lot or campus may function relative to parking by observing some general guidelines shown in this chart.

Walking Level of Service For Various Situations			
Adjacent	Minimal (LOS A or B)	Medium (LOS B or C)	Long (LOS C or D)
People with disabilities Deliveries and loading Emergency services Convenience store	Grocery stores Professional services Medical clinics Residents	General retail Restaurant Employees Entertainment center Religious institution	Airport parking Major sport or cultural event Overflow parking

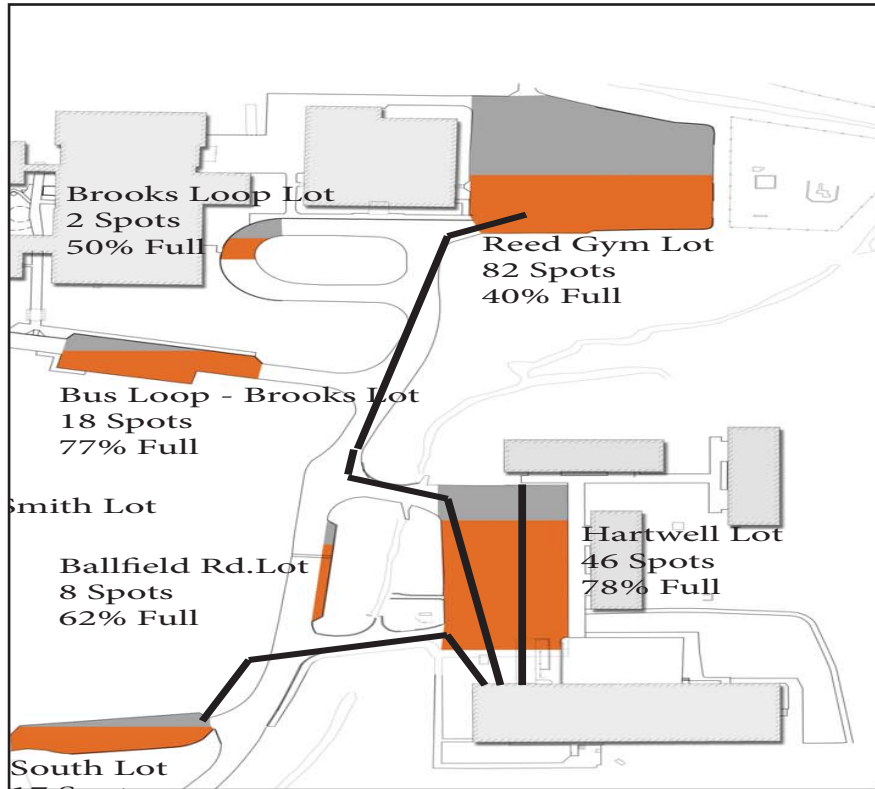
Victoria Transport Policy Institute, September, 2012

A campus such as Ballfield Road has a number of different user and service situations to consider. Drop off / pick up of students would be considered 'deliveries and loading' and would be best located adjacent to the point of entry. A community center would fall most cleanly into the professional services classification, thus a minimal walking distance. Others would fall into the medium walking distance categories. Selecting data from the two graphs allows the potential best case scenarios to be identified in the development of examples for the future campus. Through this the potential location of parking and drop off areas can be more easily understood.

It is best to begin with the assumption that all of the parking on the site will be on grade, uncovered. From the first chart, a person using an outdoor / uncovered lot will be most comfortable with a walking distance of 350 feet or less, and the comfort level will drop quickly the further away they must park. Looking at the second chart shows that various situations, or users, are comfortable within different Levels of Service, or distances from the door.

From that it can be seen that a community center and the schools both have a higher than average need for parking spaces that are adjacent to the use, but for different reasons. For a community center the number of drivers and passengers who are disabled or otherwise less sprightly is relatively high when compared to a mainstream use. In a similar way, the number of parents who drop-off and pick-up their children at school is higher than ever and continuing to increase. Looking at the second chart shows both of these situations fall under the column headed 'adjacent'.

Looking at the next group, which would be the teachers, administrators, and staff, the second chart shows a walking level of service of B or C, which for our outdoor / uncovered lots equates to a distance in the range of 700 and 1,050 feet. Interestingly, the walking distance from the Hartwell Building to the Reed Gym, which is a lot that is under-utilized even when other lots are over capacity, is approximately 760 feet, well within range. This bears out the assertion that the path on which a person walks contributes to the level of comfort they feel when so doing.



Walking distances:

- A - Hartwell to B Pod
Approx 300 feet
- B - Hartwell to South Lot
Approx 360 feet
- C - Hartwell to Reed Lot
Approx 760 feet

Thus the planning parameters for more successful parking begin to take shape; as the examples develop the primary parking for a community center will be best located at the level of entry, adjacent to the building for as many of the spots as might be practical, and with a clearly defined and lit walking route for the other spaces. The drop-off / pick-up areas for the schools should be as close as reasonably possible to the doors of the schools, without interfering with the bus lanes. The majority of the parking for staff and other users would experience the greatest level of use if located within 300 feet, with a clear line of site and good walking routes.

Interestingly, all of the large existing parking lots on site are within this distance from the doors they were originally intended to support. Changes to the building entry sequences and floor plans effectively moved the buildings away from the lots. The future campus has the opportunity to address this by re-establishing a more sympathetic placement and alignment.

Community Center Trip Generation

An area of concern expressed by some was the amount of new traffic that may come to the campus with the opening of a community center. A new community center facility is envisioned to serve senior citizens of Lincoln, allow an expanded offering of programs by the Parks and Recreation Department (PRD), and provide space for community organizations, so an increase in traffic is a reasonable expectation.

For traffic impact studies, it is standard practice to estimate the number of new trips from a project based on trip generation rates found in the Institute of Transportation Engineers Trip Generation manual. While data for many common land uses are included in this manual, senior center data are not available.

Combining a sample schedule of activities at the Lincoln Community Center, input from the Lincoln Council on Aging (COA), and knowledge of other senior centers, the study team estimated that a new senior program located on the Lincoln campus would generate about 240 new vehicles on a typical weekday (120 in and 120 out).

A community center will also provide the PRD with enhanced recreational and classroom facilities. Today, the PRD already offers a wide variety of classes and programs for adults and children. The associated vehicle trips with these existing users are already traveling on campus. With the ability to have additional and varied classes, the PRD anticipates that more residents will participate in programs. For traffic analysis purposes, it is estimated that the PRD will experience a 20% increase in participation, resulting in 130 new vehicle trips on a typical weekday (65 in and 65 out). Trips generated by community organizations have been incorporated into the estimates used for the PRD and COA.

In total, a community center is expected to generate about 370 new daily vehicle trips on the Lincoln campus. Given that the existing daily volume on Ballfield Road is about 2,100 vehicles, the center would increase Ballfield Road volumes by about 17%. The highest increase in new trips is expected to occur between 10:00 a.m. and 2:00 p.m., with about 45 - 50 new vehicle trips per hour, with fewer new trips during other hours. The intersection of Lincoln Road/Ballfield Road will be able to adequately serve these new trips without degradation in level of service.

Locating a community center on the Lincoln Campus is not projected to cause additional traffic delays at the Lincoln Road/Ballfield Road intersection if proper attention is given to the scheduling of the center's programs. Because of the short-lived traffic congestion that is created along Ballfield Road during school dismissal, it is strongly recommended that new programs be scheduled to avoid generating new vehicle trips into or out of the campus during the critical 2:45 to 3:15 p.m. period.

What this insight leads to is the ability to make traffic routing decisions based not on the cars and drivers, but on the pedestrians and feel of the campus. This has the potential to lead to a wider array of roadway layouts in future campus alignments.

Pedestrians and bicyclists

As the campus evolved in form and function, the people who use it changed as well. Daily routines, work patterns, and our general view of the world around us has moved along in response and in concert with our society.

The present day approach to parent drop off and pick up of students brings a far greater number of cars to the campus each day compared to even twenty years ago. What hasn't changed is the walk-ability of the Town and town / campus pedestrian link. When observing students and adults on site it is readily apparent that the existing sidewalk network is of little consequence or use to them. They walk on the desire path between points of interest, be it across the fields, roads, or wooded areas.

The potential in the new campus is to look for the opportunities to design for pedestrians and people on bicycles rather than having the engineering of the road cars be the primary influence. If a bike path or sidewalk were as easy, attractive, and intuitive to use as a piece of furniture, it is bound to get more use. It is also bound to be more harmonious with the natural feel of the campus, and as a result most certainly further from vehicles and thus safer.

Paraphrasing Mikael Colville-Andersen, the Danish "urban mobility expert" and founder of the Copenhagenize blog, good design encourages good citizenship by encouraging people take notice of the environment they are traveling through and through that engagement become more aware of the world. These photos illustrate how simple it could be to make many of the improvements needed to design for people, not cars.

Bicycle racks located near building entrances or campus amenities is more than a convenience. They encourage ridership by assuring cyclists their property will be safe and secure. While there are racks near the Brooks Auditorium entrance, the nearest racks for Smith are at the ballfield.

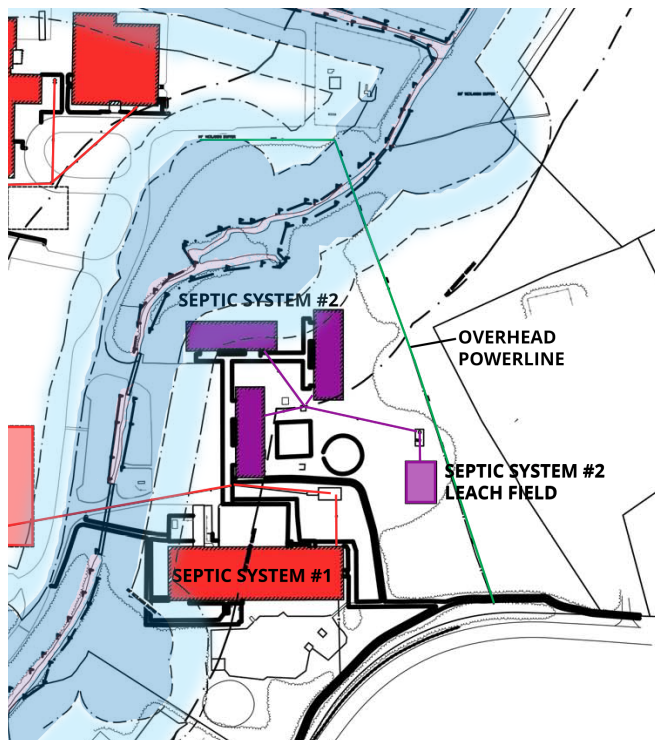
Sidewalks need to provide a sense of place and safety for pedestrians to choose them over "the direct line" path. Sidewalks too close to the vehicle travel lane or too narrow discourage walking. A line of parallel parking provides a minimal distance from the travel lane, the addition of a planter strip with vegetation is preferred. Trees in the planter strip provide shade on a hot sunny day and help frame the sidewalk as the pedestrian's space. Pedestrians on campus tend to move in large groups, which the current narrow sidewalks do not accommodate very well.



Utilities

The campus is serviced by three separate septic systems. The large system servicing the schools and the Hartwell building as well as the small system servicing the Codman Pool are both in good condition.

The system servicing the Pods is a smaller system that may provide a basis for a system to service a community center. Design of the Hartwell area of the campus may very well depend upon the requirements for this septic system, thus this is a crucial part of future planning for a community center.



Also on a critical level of importance are the two overhead power lines. Both of these lines enter the site from Lincoln Road and travel on poles through the woods. This raises some concerns and presents some limitations as well.

The primary concern is for loss of power due to a falling tree or limb. The limitations go to the inability to build under the lines on the east side of the site. These cross the Hartwell area and prevent full utilization of this portion of the site.

When the school is renovated or replaced, in whole or in part, the utility company or applicable

costs may require a single point of service entry for electric. This may drive the desire to relocate one or both lines.

It is possible to bury each of the lines along the routes they are on now, though the western line does cross a wetland area. It may be more advantageous to run a no service into the campus, burying it under Ballfield Road and then distributing to each of the buildings. This approach would eliminate the risk of losing power to a falling branch or tree on the campus, would effectively upgrade power for the entire campus, and would open up more land for potential use.

Accommodate the requirements of programs and agencies

Buildings

The committee was clear from the beginning and throughout that its charge from the Board of Selectmen and School Committee left no room for designing a building. That does not, however, excuse the master planning effort if it does not adequately incorporate the requirements of agencies and programs that may contribute funding or make use of the planning report at a future date.

The schools

There have been numerous studies of the school buildings and the potential ways in which needs might be addressed. The failure of the school project to gain the support of 2/3 of the attendees at Town Meeting in November 2012 precipitated a number of steps.

Two outcomes from the school planning efforts that are immutable within the master planning effort are the building program of 140,000 square feet along with the range of existing site amenities, the second is that nothing the CMPC does or produces should cast a negative or questionable air over any future MSBA grant application.

The previously developed building program was very useful to the CMPC since, by establishing that the school department requires 140,000 square feet of programmatic space, even if as a place holder, any discussion of the school building was kept well within the purview of the planning effort.

Any future MSBA partnered project will be a new project under the MSBA guidelines and any materials developed in advance of an invitation into the MSBA process must not anticipate a direction or resolution of the location or design of the school.

Work done by the Town in advance of an invitation into the MSBA process can address maintenance and upkeep, long range planning, capital improvement, and other fiscal and facilities related aspects of proper town and school administration. The master planning report falls squarely into that realm, while efforts to define footprint, number of stories, or other aspects of the school are likely afoul of the MSBA guidelines.

A Community Center

Similarly, a community center is a very specialized facility, the design of which must be approached in a deliberate and thoughtful manner. Professionals who specialize in this design sector are quick to point out that there is little cross-over between any other existing building type and a community center, due to the specific needs of the user group. For this reason the committee chose to employ the same approach to the community center as for the school, adopting the previously developed building program of 22,600 square feet as the guiding size of the facility.

Regulatory Agencies

Of the regulatory aspects, the committee researched the standing of the lands that are held in conservation restrictions and concluded that these are essentially unavailable. Conservation Commission regulations have been taken to heart and the planning process moved forward with these firmly in hand.

Funding and cost projections

Throughout the CMPC's efforts there has been sporadic desire from members of the public, and some committee members, for the development of cost projections for any examples or ideas that might be presented as part of this report.

Given the nature of master planning, it is a touch unusual to provide anything more specific than relative comparisons of the potential cost of one approach to another. In some cases there is the opportunity to develop cost projections for certain aspects or elements of the Campus, however. The CMPC felt that this approach is possible and would be helpful in the ongoing discussions within the town.

Given the depth of research and effort undertaken by the SBAC 2 and the Community Center Study Committee, the cost projections for those two projects are used to inform projections of potential costs for the examples within this master planning report.

The consultant team then broke the areas of the site that are not related directly to either of the two building projects and developed cost projections for certain of the elements identified within that area. These include grinding and repaving the roads and parking lots, replacement of existing curbing and provision of new curbing, construction of new sidewalks, filling and leveling of athletic fields, construction of new athletic fields, and burying the power lines.



Development of a campus for the future

With this information in hand, the committee could move forward with the development of several approaches to each major area of the campus.

By the time of the State of the Town, it was apparent to the committee that the only location that could host a community center is the Hartwell area. There is consensus that the Codman area is essentially built out and, given the physical limitations in that area, will likely remain as lightly built out as it is now. The committee also recognizes that the school should stay substantially where it is now, and that within that area there is considerable opportunity in the approach to the design of a new facility.

The programmatic guidelines are broad and help to guide the thinking of each of the examples that were developed:

The Lincoln School

140,000 square feet total area, can be multiple stories. Requires parking for approximately 200 individuals on a typical school day. Requires the range of fields and outdoor learning that is now available. Future growth is not anticipated in either enrollment or in site amenities. Must be able to have multiple options and approaches to allow for strictly town-funded, partial grant, or full MSBA grant participation in the construction project.

Community Center

22,600 square feet total area, prefer all senior activities on the ground floor. Requires parking for 80 to 100 cars, with as many as possible in the immediate vicinity of the building and on the level of entry. Future growth should be considered when identifying potential locations.

School Administration \ Pre-School programs

Accommodated well within the Hartwell Building. Parking is adequate most days but strained during teacher training and when non school programs overlap.

Parks & Recreation

Will be accommodated within a community center building.

Lincoln Public Schools facilities shop \ LEAP \ After-school programs

Now housed in Pods B & C, these groups will need to be accommodated in a new location if the Pods are demolished.

Codman Pool

Adequate for current and projected future uses, no updates or changes to the site desired.

Design Guidance

The intention of campus master planning is to not only guide future decisions regarding potential uses of the various portions and parts of the campus, but also to assure that any over-arching guidelines that may be required are outlined. By doing so the CMPC intends and hopes that the spaces of the campus between the two major building project sites will shape the design approach of the two future projects at the points where each touches the portions of the campus not directly part of the respective projects.

Several design elements are of a nature that would impact the entire site and perhaps even change the manner in which the site operates and thereby change the character of the campus. These include the roads and edges, sidewalks and walkways, parking and drop off areas, signage & wayfinding, and plantings.

The guidance and illustrations contained in this section are intended to provide food for thought and discussion and to provide a pleasant point of departure from the campus planning to the planning of future building projects.

Roads and Traffic Calming

The campus enjoys a fairly respectful, appropriate approach by most drivers. The mean traffic speed is quite low for a school campus, and this is in many ways directly attributable to the entry from Lincoln Road on Ballfield Road.

Ballfield Road is a moderately narrow road, and the width of the travel lanes relative to such as Lincoln Road or the other main roads in Town contributes to the slowing effect such roads have on drivers. Add to this the geometry of the road as it curves to the right, the plantings along the shoulders, and the presence of the sidewalk, and most of the elements that might be suggested for traffic calming are in place.

It is suggested that the roadway widths and geometries for any future roads follow as closely as possible the precedent established by Ballfield Road at the entry to the campus.

Once on the campus proper, there are a number of opportunities to integrate traffic calming with increased pedestrian visibility and safety. The Project for Public Spaces published a "Traffic Calming Toolbox" which contained a number of approaches to making streets safer for cars and pedestrians. Several of these might find a place on the Ballfield Road campus.

Widening sidewalk while narrowing streets and traffic lanes

As noted, the travel lane widths for Ballfield Road are relatively narrow. Traditional traffic engineering calls for 12- to 13-foot lanes, citing "traffic safety" standards – but newer evidence shows that lanes as narrow as nine feet can still be safe for driving. The Ballfield Road averages between 9' - 10.5' wide.

Narrowing lanes and to widen sidewalks eases crossing for pedestrians and gives them more space to walk.

Lanes can also be removed from serving traffic and designated for buses, bicycles, or other motor vehicles during certain times of the day.

Vertical elements like trees or bollards further reduce the “optical width” of a narrowed street, thereby discouraging speeding. This effect can be seen along the entry to the campus, where the mature trees along the roadway provide a feeling of a narrower road.

Bulbs, chokers, or neckdowns

These are interchangeable terms for sidewalk extensions in selected areas – such as at intersections or at mid-block – as opposed to a full sidewalk widening. The benefits include providing a haven for pedestrians waiting to cross the street, shortening the crossing distance, defining parking bays, and provision of space for amenities and enhancements (e.g. kiosks, trees, lighting). Instances of these on the campus include along the front of the two schools, where parallel parking is defined by bump-outs in the sidewalks.

Speed bumps, speed tables, and cushions

These devices reduce speed by introducing modest up-and-down changes in the level of the street, thereby requiring drivers to decelerate and are perhaps the most applicable to a situation such as the Ballfield Road campus.

Of the three types, speed tables have the most potential to address multiple areas of consideration with one item. Speed tables are road humps that are flat on top and longer than a speed bump. They are the same width as the street and rise to meet the grade of the sidewalk, providing safe and comfortable crossings for walkers and wheelchairs (and greater access for snow clearance than speed bumps).

Benefits of speed tables include the fact that people cross at the point where drivers decrease speed, that on a school campus the elevated walkway effectively increases the height of the pedestrian, making them more easily seen by drivers, and that the accessible route has described by ADA / MAAB is more easily achieved, without the need for tactile warning strips, curb cuts, or sloped walks.



Highlighting the speed tables with clear markings to alert approaching drivers increases the effectiveness of the installation. This can be accomplished by painting words and symbols directly on the street, changing the texture of the street surface, or using signs to effectively put drivers on the alert.

Rumble strips and other surface treatments

The rumble strip provides visual and aural cues to alert drivers to areas that require special care such as roadway intersections, pedestrian or bicycle crossings, or areas of heavy pedestrian activity. Materials like granite and concrete are roughened by being broken into raised lines or patterns, and placed in strips across roadways, usually in a series. Drivers can lessen the vibration and the abrasive sound they create by slowing down.

Changes in pavement color and texture (such as bricks or Belgian blocks), used in interesting and visually attractive ways, can also have the effect of rumble strips. These paving treatments can also delineate and create awareness of a pedestrian crosswalk or haven, make a street appear narrower than it is to deter speeding, or define a street from a sidewalk or a parking lane.



Areas of consideration before installing traffic calming elements

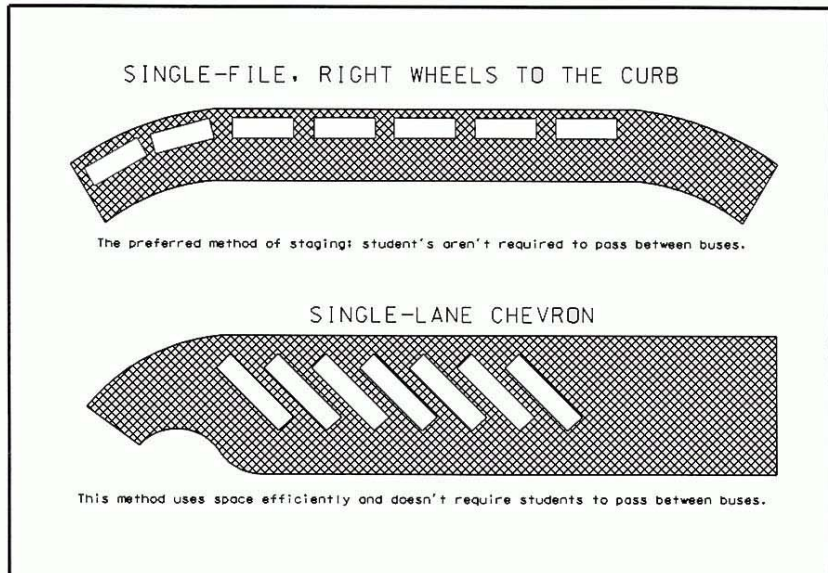
The traffic-calming tools outlined above can be effective in a variety of ways. However, each tool has its own specific applications, and not every one fits every single circumstance. Some are more effective if used in combination with each other, or with alternative transportation approaches like bicycles or buses. The right use hinges on existing conditions along a street and the desired outcomes. Among many issues that need to be considered when making traffic calming choices are several that apply directly to a campus setting such as emergency and service vehicle routes; school bus paths, consideration for the diversity of drivers and pedestrians (especially elderly people and elementary age children), winter plowing, and storm water drainage.

Student pick-up and drop-off

One avenue to explore during the design of the school will be the footprint of the building and the location of student pick-up / drop-off areas. Given the K - 8 grade range, bus loading may be a major consideration in the selection of site and floor plan options.

Lincoln does not run so many buses that on-site coordination is problematic. In fact, embracing the physical space requirements of the buses can bring benefits to the site design.

Currently the several of the buses wait along Ballfield Road, south of the entrance to the Hartwell area. This has the twin effects of narrowing Ballfield Road while wreaking havoc upon the road shoulder, which is in a regulated area.



The potential solution of providing a hard surface shoulder for bus staging would provide additional parking along Ballfield Road for large scale events such as the fourth of July. However, this would likely entail the introduction of more impervious surface within the regulated area, which would necessitate agreement by the regulatory boards.

A second potential solution is to explore potential bus waiting and loading configurations in a location adjacent to the school. The most common is a single file line along the curb, which has certain advantages but doesn't yield the best secondary value to the site. Consideration of a chevron loading pattern as shown in the drawing has the benefit of full-view vision for all of the bus doors and the provision of two automobile parking spaces for every one bus loading spot during non-school hours.

Such consideration to bus loading can maximize return on the investment in site construction while keeping a wider range of potential options open for consideration as the school design process moves forward.

Road shoulders

The predominant approach to the edges of the roads on the campus is to leave them unfinished, that is - dirt with whatever plant may grow. This results in the creation of dips, holes, and shallow trenches in areas of frequent vehicular use.

There are potentially two approaches to controlling or eliminating the deterioration of the shoulders - keep vehicles off of the shoulder and on the road through curbing, fencing, or similar approaches, or, recognize that the current evolution of driving habits is actually encouraged by, and contributes to, the nature and character of the campus. By tolerating the use of the shoulders for parking, the need for additional formalized parking is



effectively reduced. The vast majority of the vehicles parked in this manner are stationary for a short period of time and providing formalized parking for these instances would result in a considerable increase in parking or a substantial change to the character of the campus. The conundrum then is how to preserve the road shoulders without creating too formalized or restrictive a solution.

The most basic approach may be to simply place gravel on the shoulders. This would provide a permeable surface which would be able to support most of the vehicles that might venture onto the surface. The downside of gravel is that it tends to be difficult to retain in place and not easily plowed or cleared in the winter.

Asphalt paving is perhaps the next level of surface to consider. This would have the effect of visually, and, depending upon how many cars are parked - actually, widening the roadways. The spill-over may be increased travel speeds on campus as drivers feel more comfortable, and a disruption to the visual character of the campus due to the increased paved area.

Perhaps the approach most in keeping with the use patterns and character of the campus is a permeable paving surface. These can range from a plantable bearing surface such as Grasscrete to a solid surfaces such as manufactured permeable pavers and natural cobblestones.

Grasscrete, Geo Block, and other sustainable paving systems allow grass to grow within load-bearing concrete pavers. This approach is typically less expensive than cobblestone, can support heavy wheel loads, and would provide a good chance of preserving the feeling of grass running to the edge of the paved road. However, the grass planted in these systems typically has a high rate of sun scorching and heat burn-out unless an irrigation system is included as part of the installation.



Other permeable paving systems include manufactured pavers and cobblestones or granite pavers. Manufactured pavers such as those made by Belgard and Unilock are typically less expensive than cobblestone or granite pavers, but may require sub-surface drainage to assure the best stability and life cycle expectation. These products can support heavy wheel loads, can be plowed with snowplows or snow-throwers, and are very durable when properly installed.



Cobblestone / granite pavers may provide the most attractive aesthetics, a historic feel, and likely the longest lasting solution. Cobblestones are adaptable to multiple installation parameters and can define a place with a very sophisticated look. The initial cost will be the most expensive of examples given, but the life cycle costs are likely to be considerably lower than the other products.



The foregoing approaches do not need to apply only to the roadway shoulders. They can be considered for overflow parking areas and access routes where a vehicle may need to traverse but a formalize road is not desired.

Pedestrians / bicyclists

The existing side walks are not used to the level that might be reasonably expected. This is attributable to a number of factors; firstly, most of the side walks do not form a complete pathway for point to point travel. secondly, most of the desire lines observed are not close to the location of hard surface walkways, third, the width of the walks is too narrow for the age group and population, causing pedestrians to either walk along side each other, with some on the grass, or to avoid the walkways completely.

Widths of walkways on a the campus could be a minimum of six feet wide, with those in front of the schools or in other areas where larger groups may gather being up to eight or ten feet wide.

Materials for walks near buildings can be concrete, which provides a good life cycle and is durable in New England weather conditions. Placing sign posts and light poles to the rear of the walk allows initial snow clearing to be done with the wing plow of truck reducing the amount of snow to be removed by a snowblower or shovel.

For walkways that are remote from buildings or that may cross or be adjacent to fields, consideration could be given to using a rubberized surface. Though more expensive than asphalt or concrete, a rubberized surface can be colorized, is less of a hazard is near a play field, is ADA / MAAB compliant, and can be part of a health and fitness trail.

Cross walks for pedestrians and cyclists were addressed in the section on traffic calming, but of the potential pedestrian / vehicular interactions, the crosswalks are the most deliberate and one of the easiest to address.

A less obvious means of increasing use rates of walkways is to make the journey more attractive. This can be done by introducing points of attraction such as art work, a copse of trees or other landscape element, a picnic / lunch area, or perhaps a sitting area or learning node. For paths that may be adjacent to or cross between fields, spectator seating, team benches, coaching spots and standing zones can increase walkway usage.



To help drive walkway use up for the public while maintaining school security, the design should push the circulation and walking paths far enough away from the schools so that a person walking for exercise would be noticeably different from a person who is approaching the school.

Finally, a successful walkway layout is one for which it is easy to discern the starting point, has good wayfinding and signing, and is designed and made of materials which convey both overtly and subliminally the fact that this is the path that will take a pedestrian to their destination, while minimizing the tendency to wander from the established path.



Trees, plantings, lawns

The existing trees, shrubs, lawns and fields are critical to defining the character of the campus. Unfortunately it appears that disease and age may be working against the well-being of many of the older specimens, especially the elm trees. As the time from planting to becoming a significant contributor to the feel of the campus is quite long for most trees, a proactive approach to the greenery of the campus may pay dividends in a short while.

It may be beneficial to work with a landscape architect and an arborist to develop a plan to inventory what is on campus. From this it would be possible to determine which trees and shrubs are very good and should be saved, which are marginal and should be put on a watch list, and which are stressed or otherwise not salvageable.

The next step would be to identify a selection of trees and shrubs that might be appropriate for the campus. This should include those for which a specimen quality plant is appropriate, and those for which a lesser example would suffice.

Once the preceding work is underway, an inventory of the plants can be cross-referenced with tags and signs to inform students and visitors of the type of plant, botanical name, date of planting, and likely point of origin shown. This makes each plant a learning node and provides another point of interaction between people and the campus.



Grass / lawns / fields

The fields and lawns on the campus are subject to an almost continuous use pattern. Owing to the lack of adequate fields to suit demand, it is not possible to rest any of the athletic fields to allow proper regrowth of sod.

In a way similar to the approach to trees and shrubs, if one does not already exist, it might be wise to develop a plan to address comprehensive maintenance and longevity, how to maximize durability of the existing fields, how to integrate any new fields into the portfolio and use rotation.

Deriving from this plan will be the ability to determine the need and potential for irrigation of selected fields and plantings, design and construction parameters for improving existing fields, and perhaps most importantly, design and construction parameters for construction of new fields.

Lighting

Lighting on the campus is refreshingly sparse and overwhelmingly appropriate in location and type. As the campus evolves further and more programs are located in the buildings, there will be efforts to provide lighting as part of each construction project and from those potentially across the entire campus.

To ensure that the campus does not become a mixed array of lighting types, it may be beneficial to establish a uniform vocabulary of materials and products. These would cover the range of potential installations, but could also stipulate mounting locations and heights, lamp types, and security features such as instant on with motion sensors, while the majority of the lighting is off as its standard setting.

Adopting and following BUG (backlight, uplight, & glare) initiatives will provide the least intrusive finished project. Adopting a set of standards in advance of the building projects will be the best means of assuring the campus is a uniform design when completed.



Vistas, views, and focal points

The character of the campus is closely tied to the vistas, views, and focal points with which visitors relate in so many different ways. As the campus evolves and new buildings are constructed, the preservation of some existing points and creation of new ones will be fundamental to the success of the finished projects.

As the efforts for each of the next projects is beginning, efforts should be made to identify areas such as the picnic grove, Codman pool, new or existing buildings, tennis courts, etc., that may enhance the experience of the campus and to document, as much as possible, why these are of interest and what might be done to enhance them.

Existing focal points can be preserved or altered through the design of the central elements of the campus of the future, keeping an eye on these points can assure that future visitors to the campus will enjoy their experience as much as those in the past did.

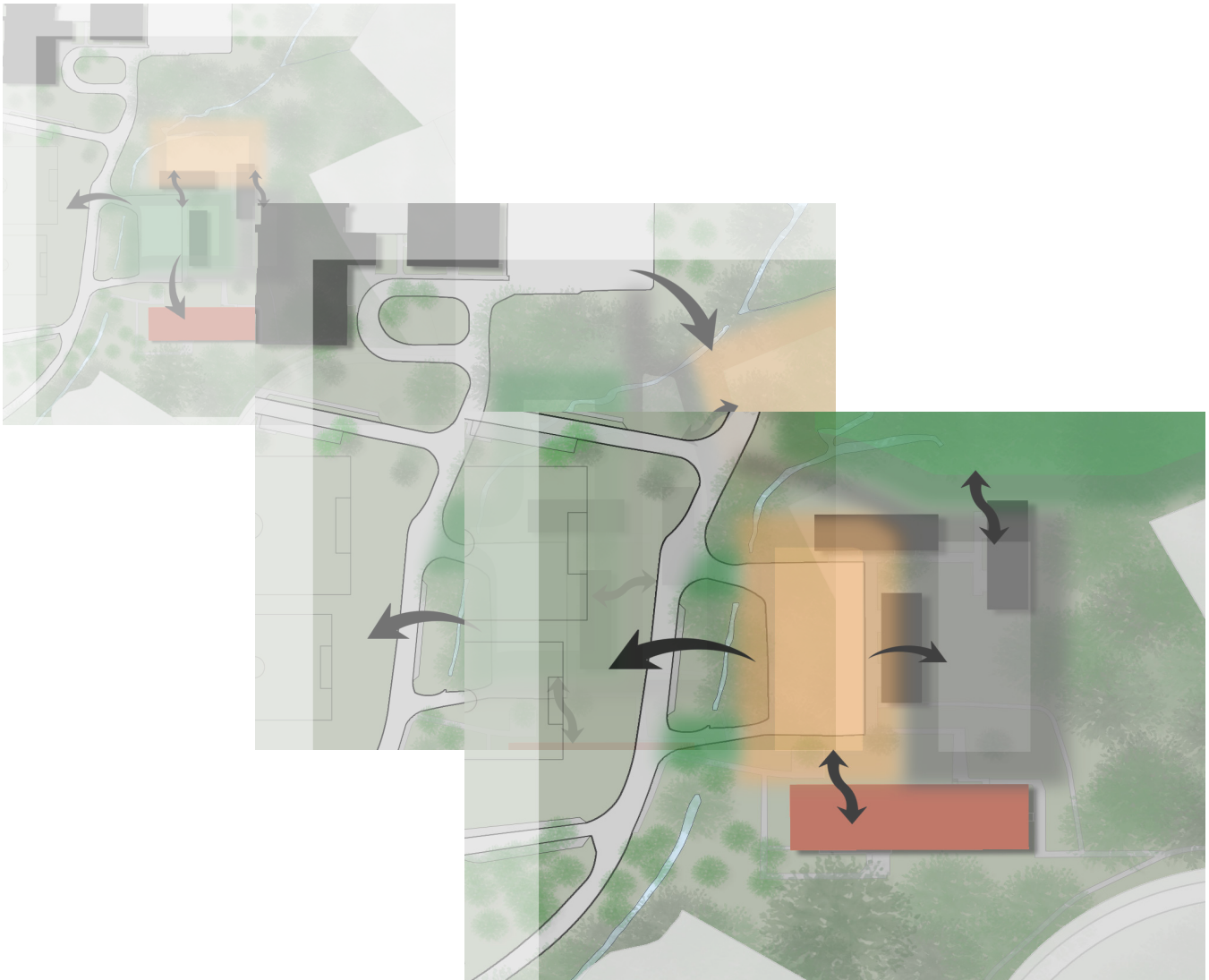


Conclusions

Each of the potential arrangements explored in this Section illustrate the research and findings of the CMPC. Perhaps more importantly they show the range and flexibility available to the Town as steps are taken toward construction of new buildings and improvements to the Campus.

The number of interchangeable parts that were developed through the CMPC's efforts should be seen as just scratching the surface. Subsequent building committees will have benefit of an effort focused on a particular use or building and will therefore be able to build upon the material developed through this master planning effort.

The design guidelines contained within this Section are intended to illustrate what might be considered by each committee that may follow, hopefully establishing a common understanding and starting point for projects that follow on from this work.





Campus Master Planning Committee (CMPC) Concluding Summary

How can the Ballfield Road Campus best serve the Lincoln community now and in the future? Can the Campus hold all the functions and uses the community wants it to accommodate?

Lincoln has in recent years facilitated studies that have considered the need for an improved K - 8 school building as well as a community center, and our committee's work has served as another forward-iteration in the ongoing progression toward these future accomplishments within our Town if voters decide to affirm such choices. We have offered this Campus Master Planning Committee (CMPC) Report as a tool to be utilized by the Town in determining the Campus' future.

Our study has shown that the Ballfield Road Campus has the capacity to accommodate our K - 8 school building, a potential community center in the Hartwell Area, while at the same time continuing to encompass the community resources the Campus already holds, such as the Codman pool, recreational spaces, athletic fields, and cherished central green. Through extensive public outreach and engagement, we have also learned that Lincoln citizens care deeply about preserving the open and rural character of the Campus, prefer a Campus that offers both pedestrians and vehicles a safe and efficient network of movement and flow, and favor increased open spaces and recreational fields on the Campus.

We have also determined that in order to fully respect these public sentiments within the capacity confines and physical parameters of the Campus, while remaining aware of cost implications, priorities must be identified and choices must be made; we have framed these choices as "tradeoffs". It is within this "if this, then this" framework that we have outlined three examples of differing views of the relationship between the land use with the buildings on the Campus. These three examples vary in the amount of tolerance for change and financial commitment each would require, and thus represent a spectrum of avenues in informing future discussions regarding ways to view the Campus going forward.

We have intentionally not put forward a committee preference for one example over another, as it is our view that Lincoln voters and future building committees will ultimately decide the direction of the Campus. Again, we have intended this report as a tool and it is our committee's hope that it will be utilized as a way to move our community closer to more effective utilization of the Ballfield Road Campus and an even better Lincoln for all.

Finally, we thank the Lincoln Board of Selectmen and the Lincoln School Committee for the opportunity to serve our fellow citizens in such an impactful way as members of this committee. We are grateful to the many members of the Lincoln public who participated in this work with us, and appreciate the inclusive and diverse perspectives that all of that engagement provided. We have tried to remain thoughtful throughout our process in order to anticipate the ways in which our work could best help Lincoln in the future, and appreciate the opportunity to have collaborated as a committee together and served our community well.



SECTION 6 - APPENDICES

The research and effort expended to generate the foregoing report resulted in a substantial amount of background materials. This material ranges from data related to traffic and parking through to the public outreach presentations and feedback.

The following appendices collect this material for the public with the intention of providing the most in-depth understanding of the CMPC's effort possible.

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PTO Picnic Open House

Contents:

Question board

Map

Responses to question board



THE THING
I VALUE MOST
ABOUT THE
BALLFIELD
ROAD CAMPUS
IS...



Photo courtesy of Philip Greenspun

October 15th Public Forum

Contents:

Presentation

Question boards

Maps

Responses to question boards

Comments from maps



October 15th Public Forum

Presentation





Ballfield Road Campus Master Planning Committee

Public Forum
15 October 2015

LLB ARCHITECTS

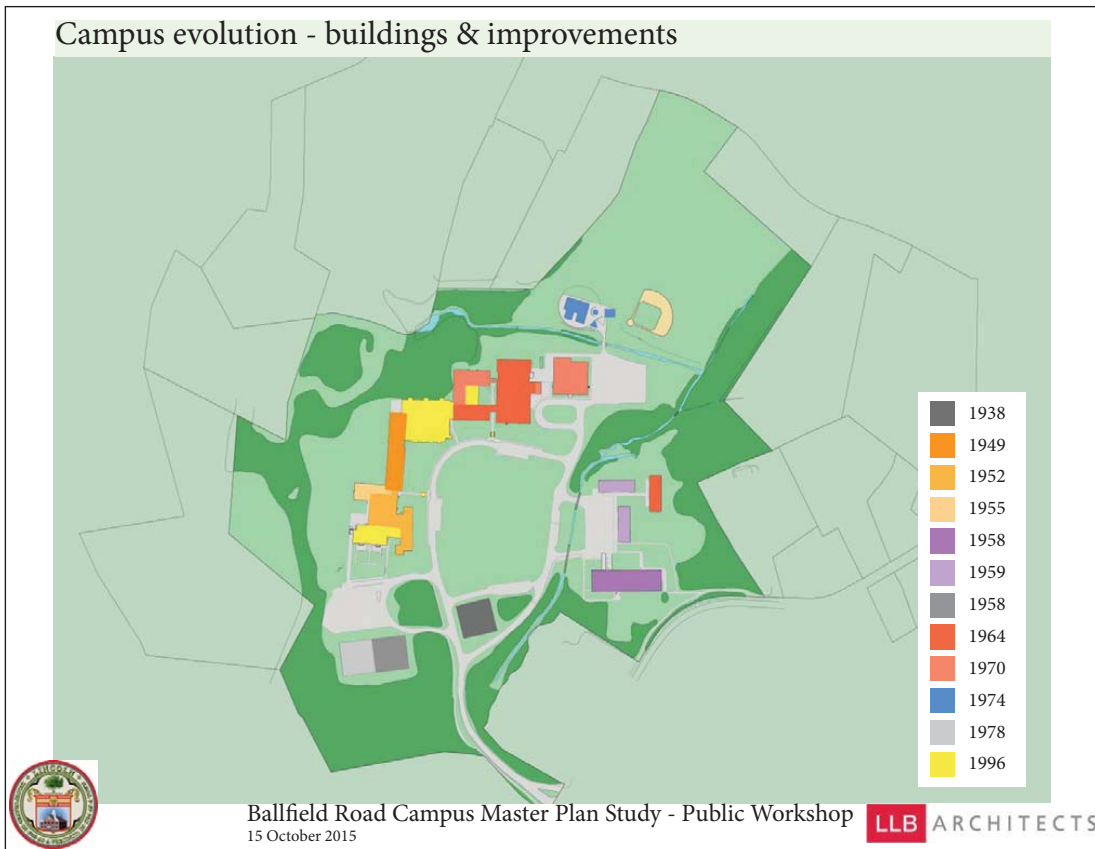
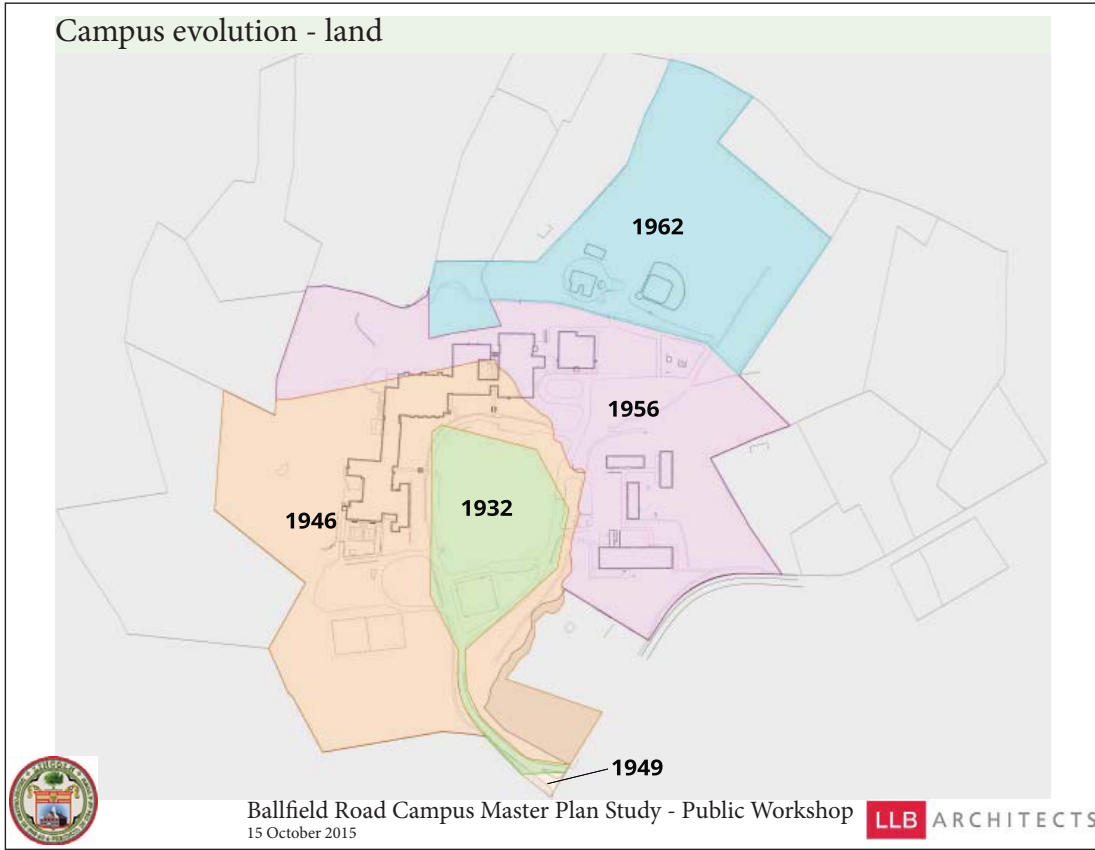


Campus Analysis

Historic, Current, & Future Uses
Site Information



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Campus character - representative images



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Campus character - representative images



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Campus Master Planning Committee Charge

...to inform the planning for the contemplated school building and community center projects.

...produce a final report that confirms the existing uses and needs for space on the campus, anticipates potential future uses, assesses the capacity of existing infrastructure to support existing and projected uses...



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Master Plan - interim thoughts:

Regulatory - current conservation regulatory zones do not appear to impose unreasonable constraints

Septic - continued use of systems appears feasible

Athletic fields - limited field availability; could use more

Buildings - existing buildings have functional & physical limitations

Traffic - typical for a school campus; Ballfield Road acceptable; on-site drives could be improved

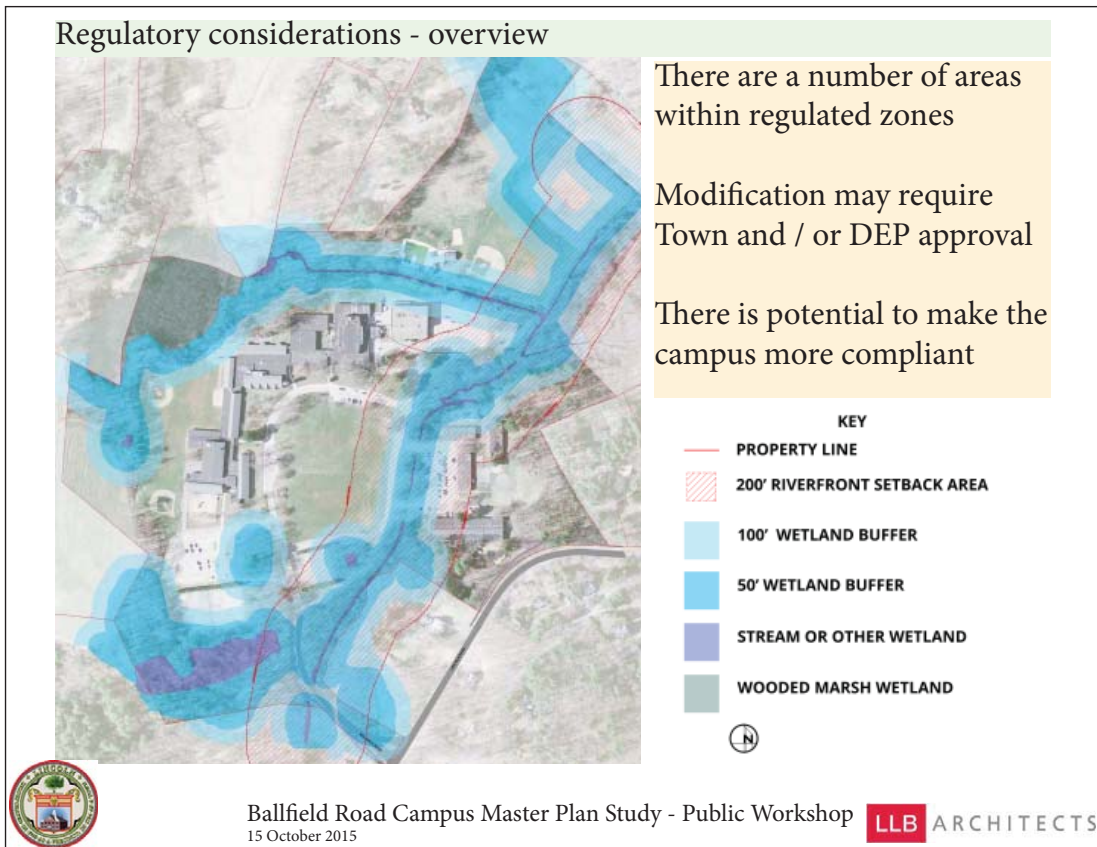
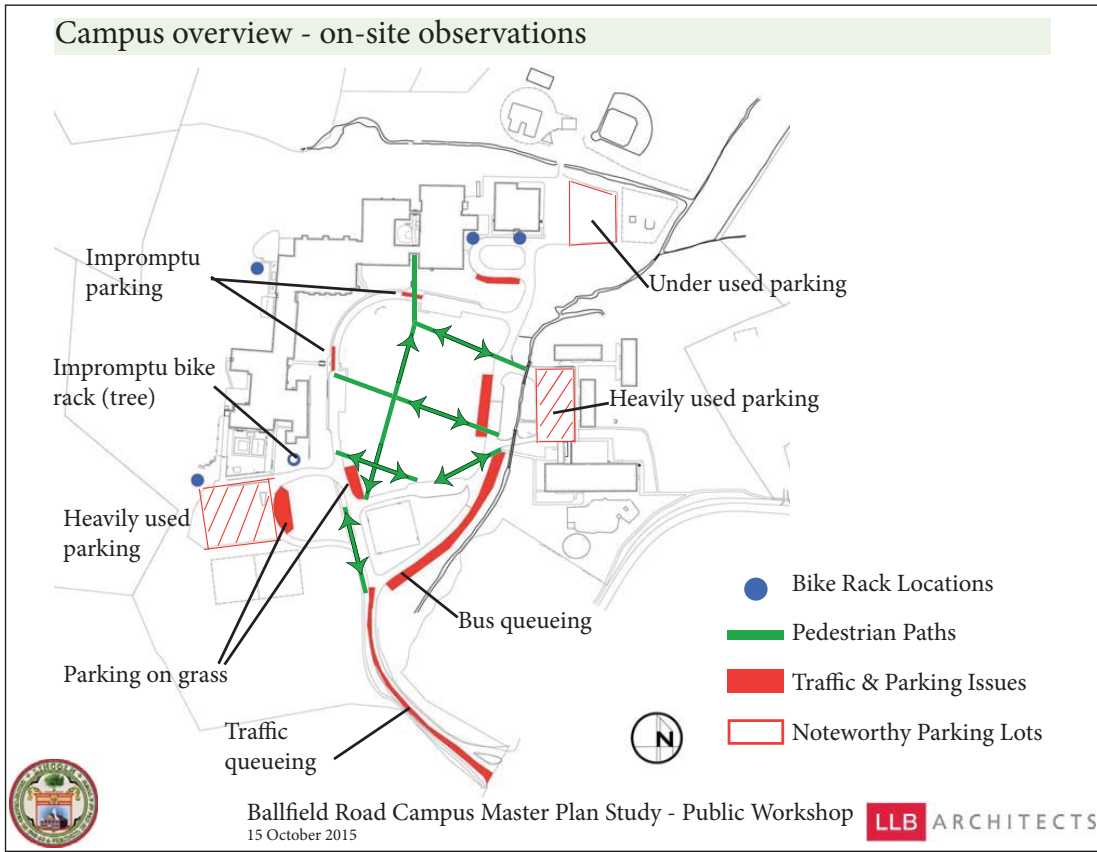
Parking - just adequate for school use; more will be needed

Options - no factors found preclude locating the community center on the campus; there are a variety of potential solutions



Things we have heard . . .





Sewage disposal - overview

There are 3 systems

Codman Pool

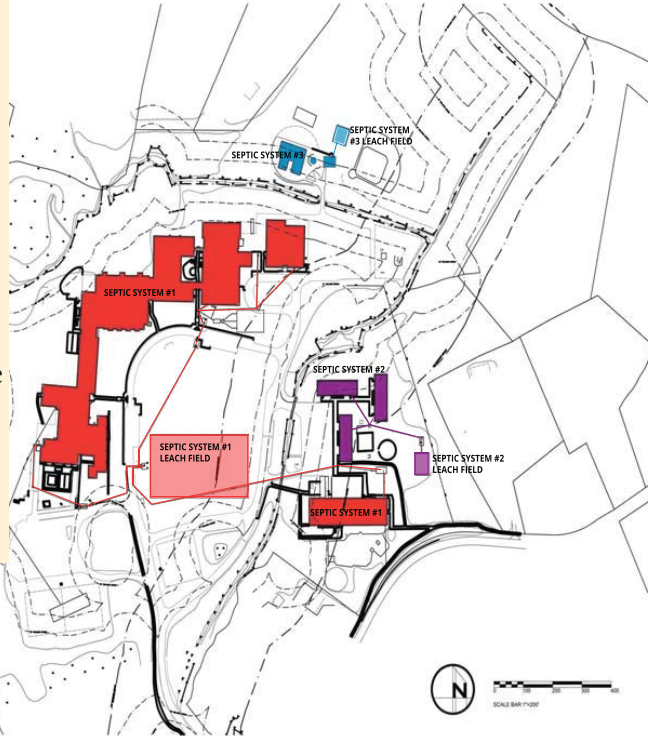
Pods

Hartwell & Schools

Modification will require
MA DEP approval

The system serving the
Pods may be able to serve
a community center

An on-site treatment
plant may be an option



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Athletic Fields - overview

Scheduling constraints

Fields over played / used

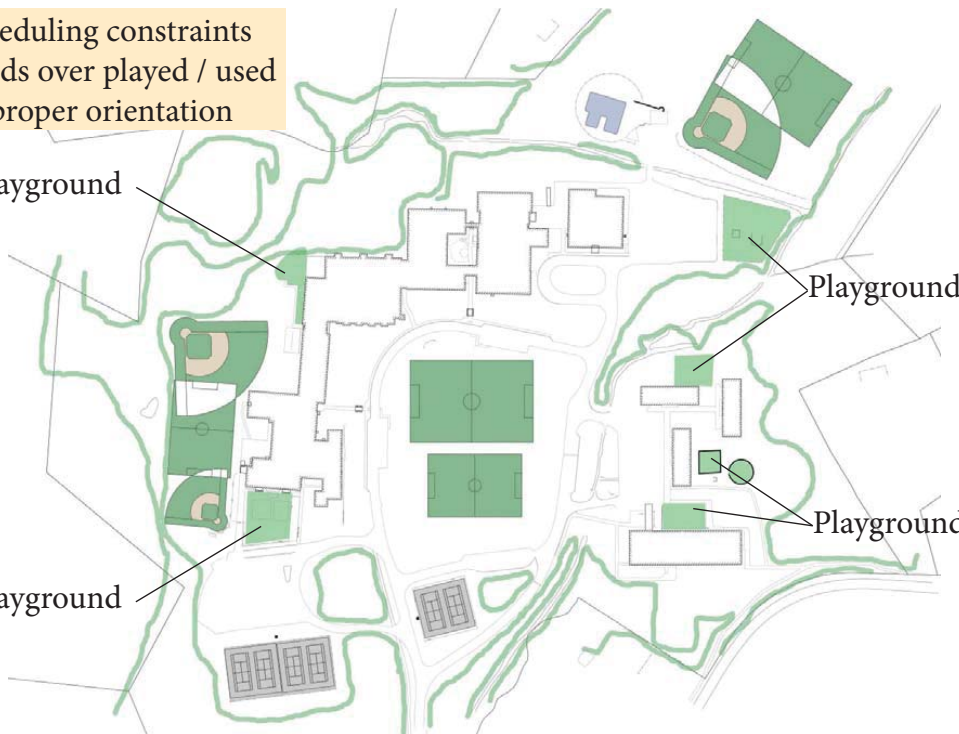
Improper orientation

Playground

Playground

Playground

Playground



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Buildings -

“useable”, “significant”, “code issues”, “not appropriate”, “part of the campus”, “characterful”, “iconic”, “need repair”



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Buildings - interim thoughts:

Hartwell School - functional, attractive building;
design and construction may restrict future uses

Pods - limited viability; perhaps suitable for swing space

Reed Field House - active school and community use;
no connection with school imposes limitations

Brooks School - auditorium is a very nice space;
functionally compromised for 21st century education

Smith School - gym is a nice space;
functionally compromised for 21st century education

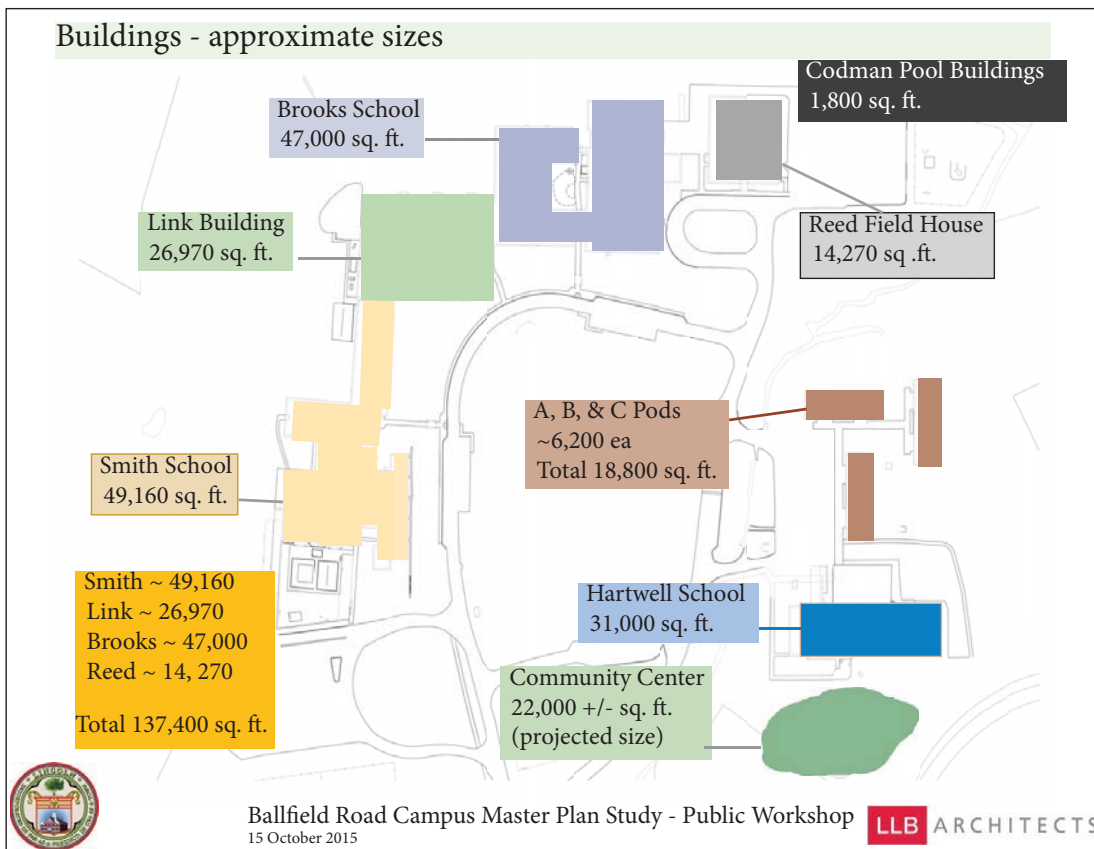
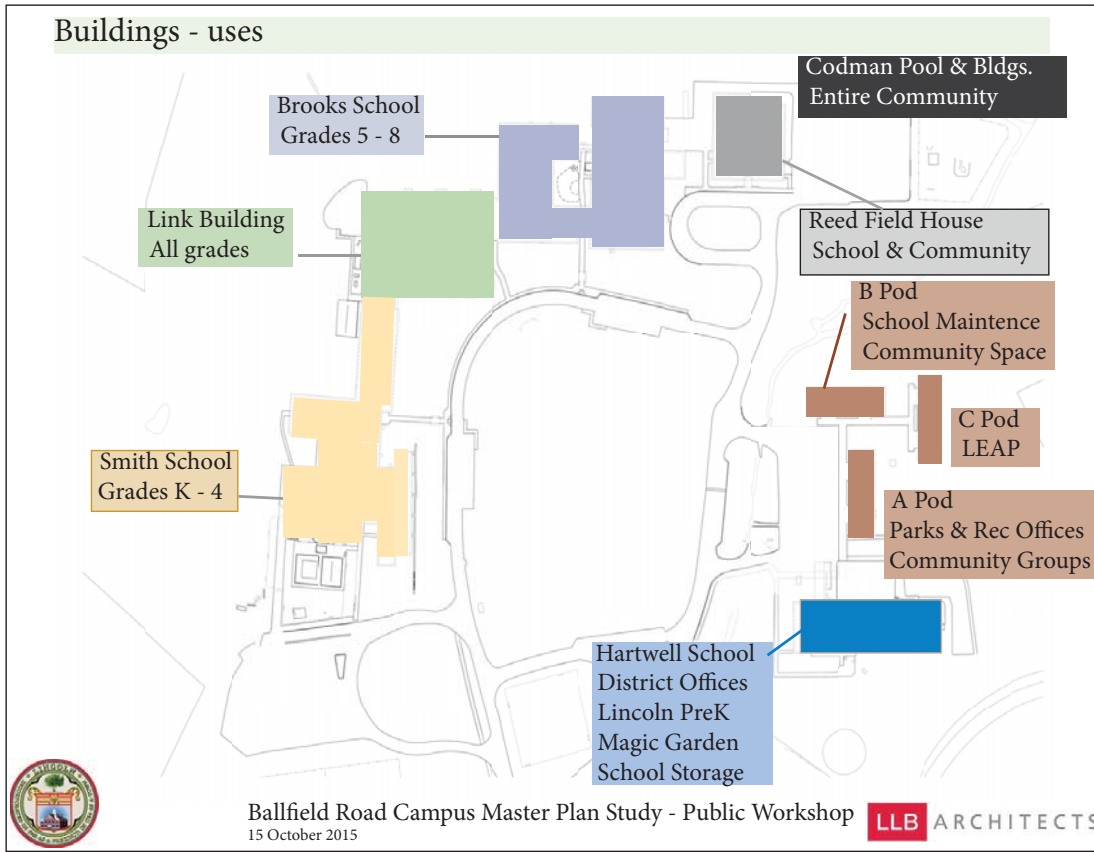
Link Building - media center is a nice space;
some functional compromises for 21st century education

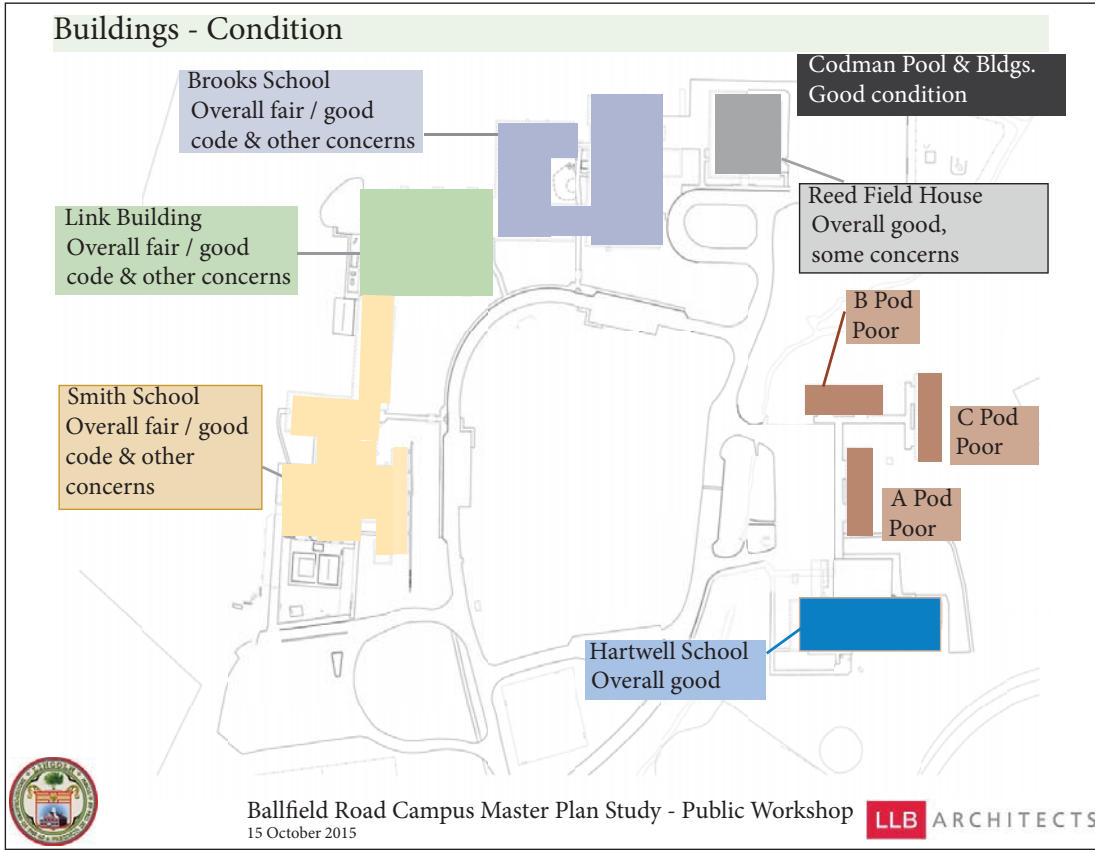
Codman Pool - good condition; functionally appropriate



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Traffic -

“too many delays”, “dangerous”, “no capacity”,
“confusing”, “no loading dock”, “buses cause problems”



Traffic - interim thoughts:

Ballfield Road

- Traffic flow is typical of a school campus or driveway
- Weekday traffic volume is about 15% of the total Lincoln Road volumes
- Longest exiting delays are associated with school dismissal
- Peak delay period lasts about 15 minutes
- Other events can cause short-lived exiting queues as well

Intersection of Ballfield Road and Lincoln Road

- Has adequate capacity for current traffic volumes
- Could accommodate new trips generated by a Community Center
- Coordinated schedules of events and activities will be very important

On-site drives

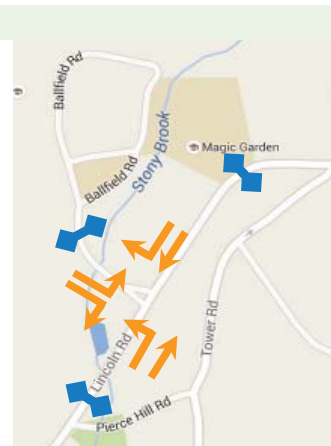
- Physical layout is functional, but not ideal
- Parking in non-designated spaces creates traffic impediments
- Staging of buses along Ballfield Road limits vehicle travel



Traffic - methodology

Lincoln Police

- Placed Automatic Traffic Recorders
- Counted at three locations
- Counted in August and September
- Measured volume and traffic speeds

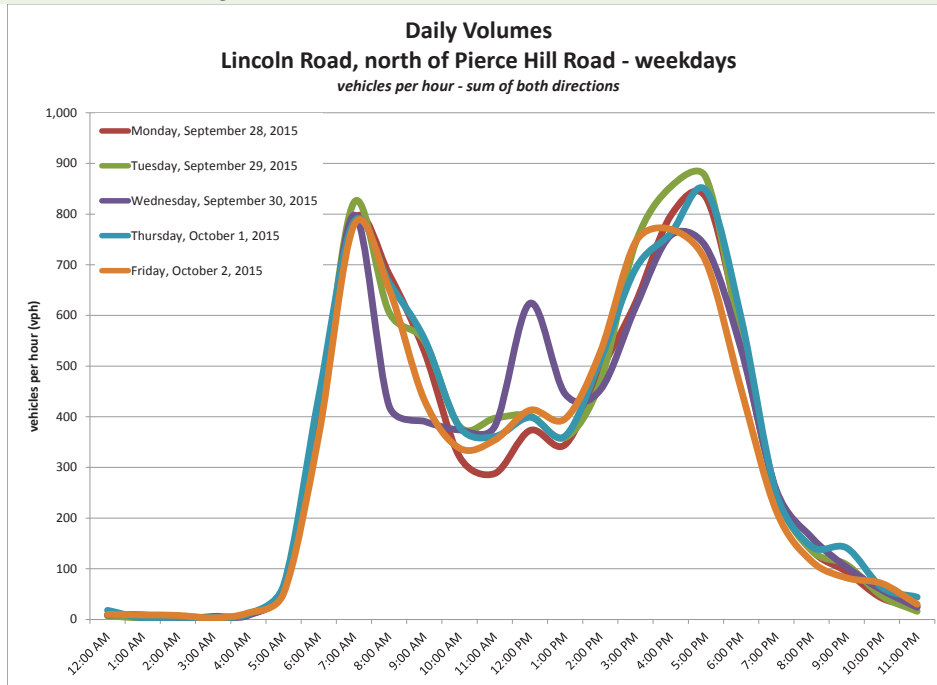


Consultant Team

- Conducted intersection counts
 - At Lincoln Road and Ballfield Road
 - On the campus
- Observed school day vehicle and pedestrian activities
- Observed waiting and delays exiting campus
- Used data to assess level of service of Lincoln Road / Ballfield Road intersection



Traffic - volume graphs

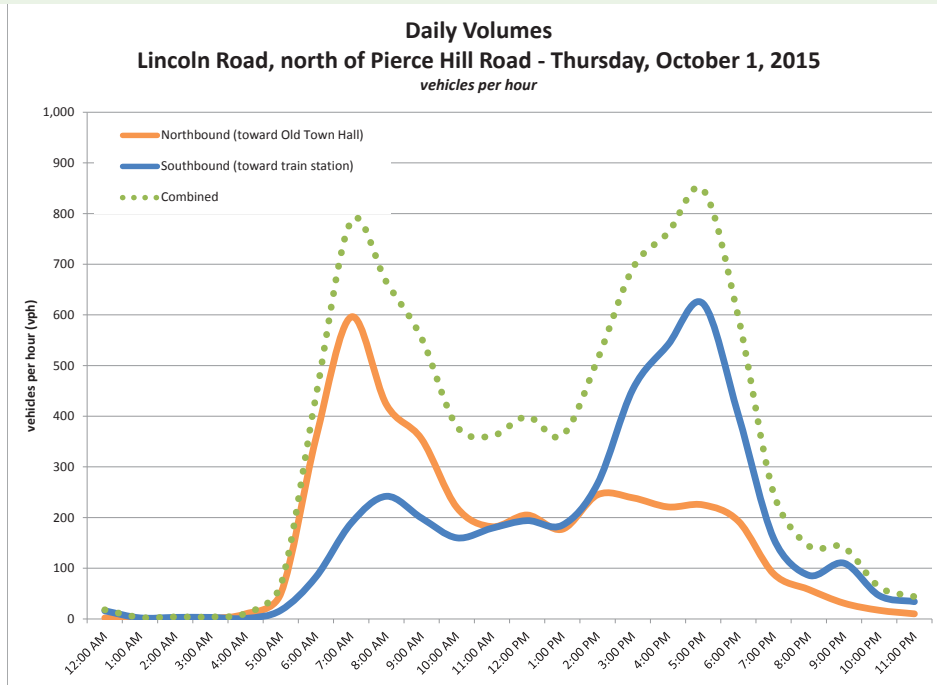


Ballfield Road Campus Master Plan Study - Public Workshop
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Source: Howard Stein Hudson
10/6/2015



Traffic - volume graphs

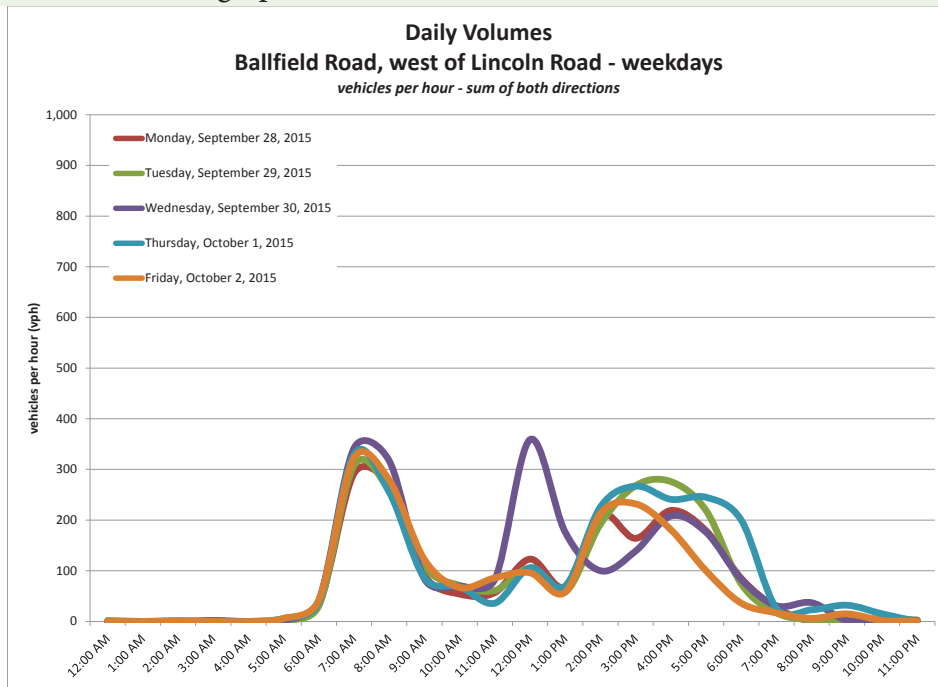


Ballfield Road Campus Master Plan Study - Public Workshop
15 October 2015

Source: Howard Stein Hudson
10/6/2015



Traffic - volume graphs

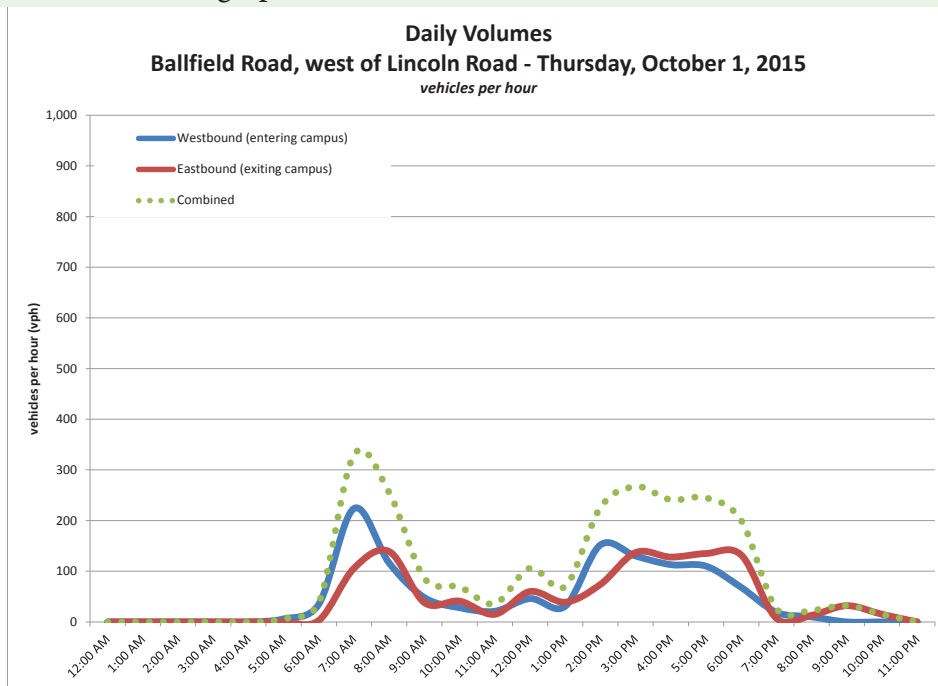


Ballfield Road Campus Master Plan Study - Public Workshop
15 October 2015

Source: Howard Stein Hudson
10/6/2015



Traffic - volume graphs

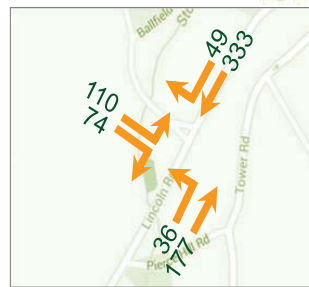


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Source: Howard Stein Hudson
10/6/2015



Traffic - intersection analysis



Observed dismissal peak hour volumes

Ballfield Road approach to Lincoln Road

Weekday Peak Hours	During peak 15 minutes		During other 45 minutes	
	avg. delay (sec/veh)	level of service	avg. delay (sec/veh)	level of service
a.m. peak (7:00 – 8:00 a.m.)	19.2 (7:45 – 8:00 a.m.)	C	7.3	B
dismissal peak (2:45 – 3:45 p.m.)	92.2 (2:55 – 3:10 p.m.)	F	7.3	B
p.m. peak (4:45 – 5:45 p.m.)	18.8 (5:15 – 5:30 p.m.)	C	18.8	C



HOWARD STEIN HUDSON

Ballfield Road Campus Master Plan Study - Public Workshop
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Parking

“not enough”, “always full”, “not in the right location”, “pick up / drop off difficult”, “buses cause problems”, “confusing”



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Parking - interim thoughts:

Parking use

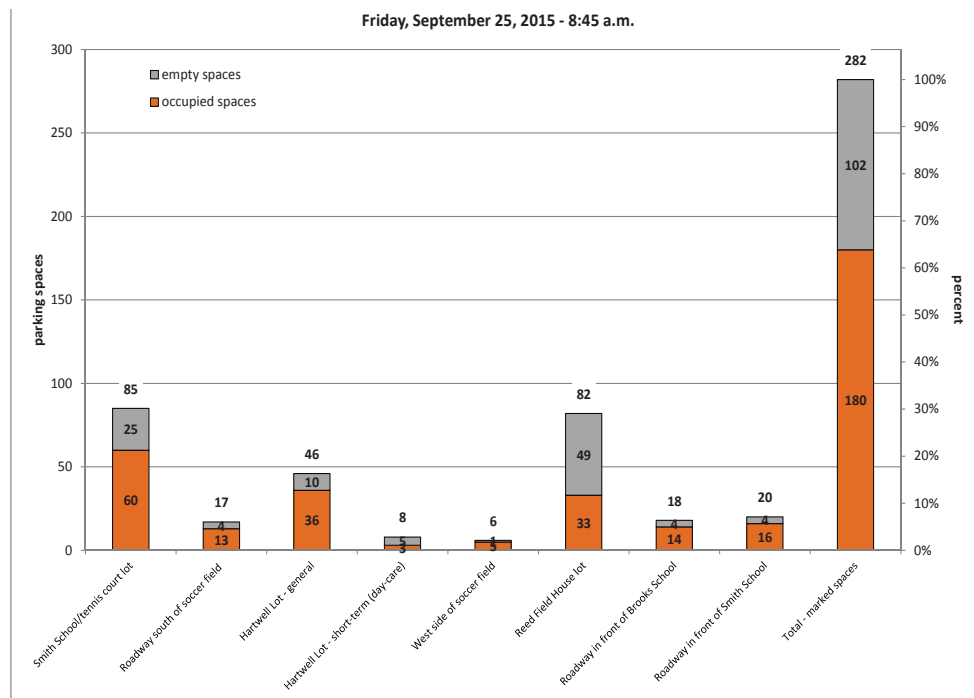
- Patterns are typical of a public campus
- Most school days see about 65% of the total capacity
- The most accessible lots are essentially full all day
- Use patterns don't follow designated spots or areas

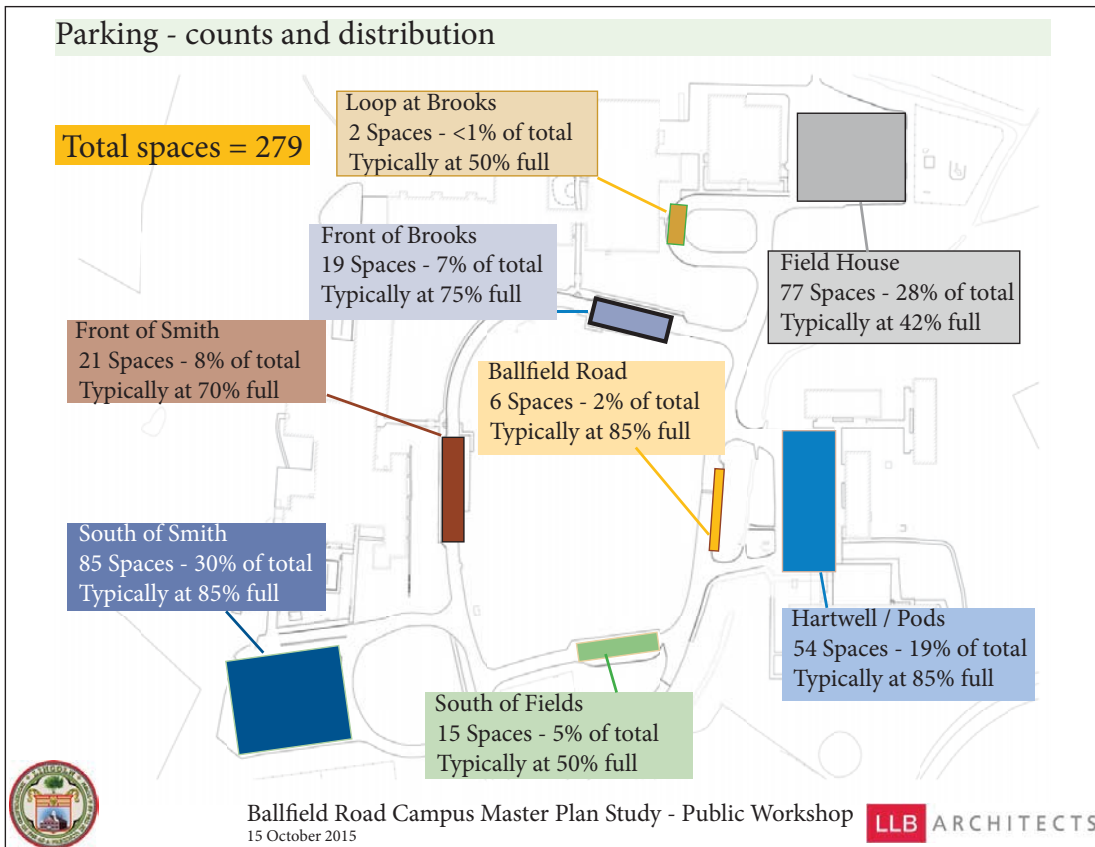
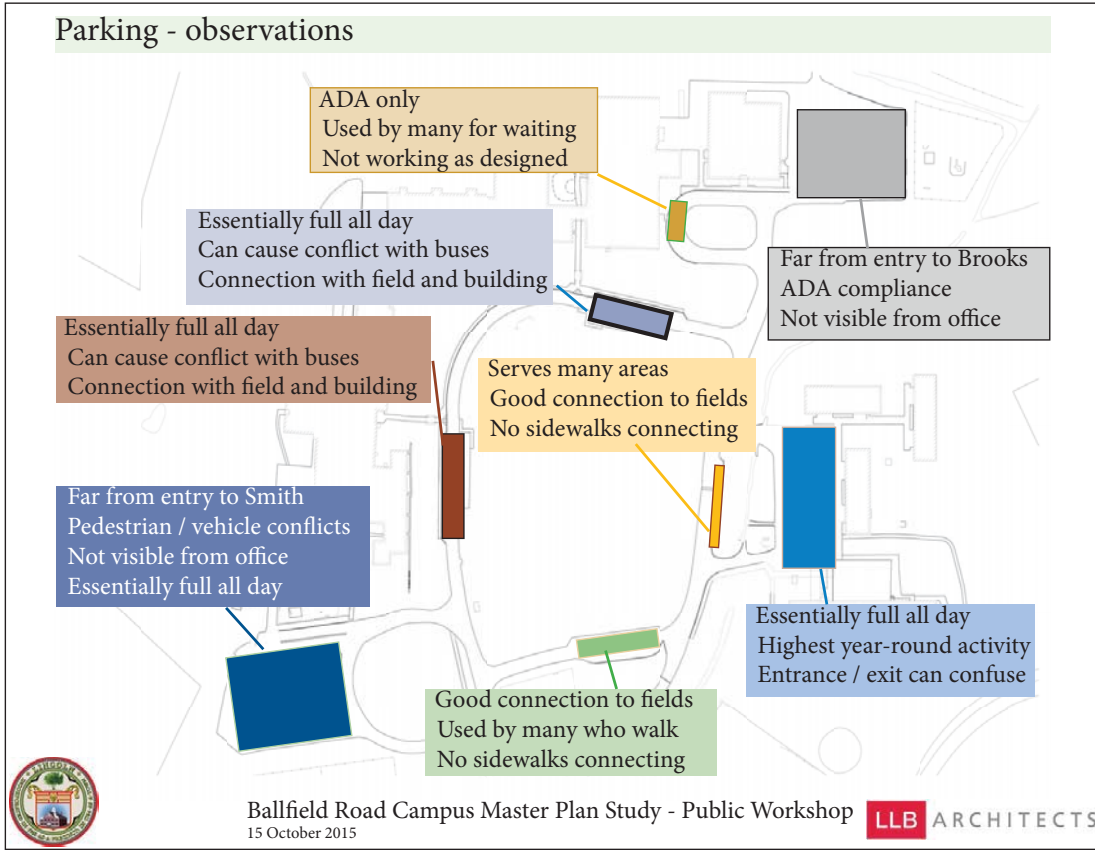
Considerations

- Distributed lots contribute to the character of the campus
- Not all of the lots are used equally on a typical school day
- Adjusting the capacity of some of the lots might elevate safety
- Connecting lots with pedestrian features might elevate safety
- Better visual connection between lots and offices might elevate safety



Parking - representative school-day use





Public Input Activity Campus Programming

Key Considerations
Options Testing

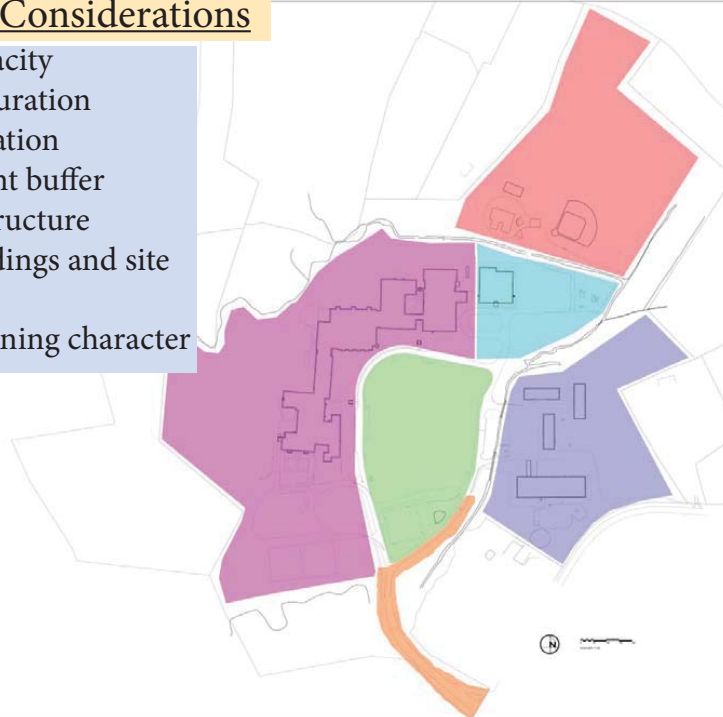


LLB ARCHITECTS

Campus planning considerations - overview


Campus Wide Considerations

- Septic system capacity
- Parking lot configuration
- Building configuration
- Wetland/Riverfront buffer
- Pedestrian infrastructure
- Condition of buildings and site improvements
- Defining and retaining character



LLB ARCHITECTS


Campus planning considerations - east side zones



Codman Zone Considerations
Pool; Codman Field; mostly undeveloped; parking; no direct street access; gas line; some slopes; regulatory considerations

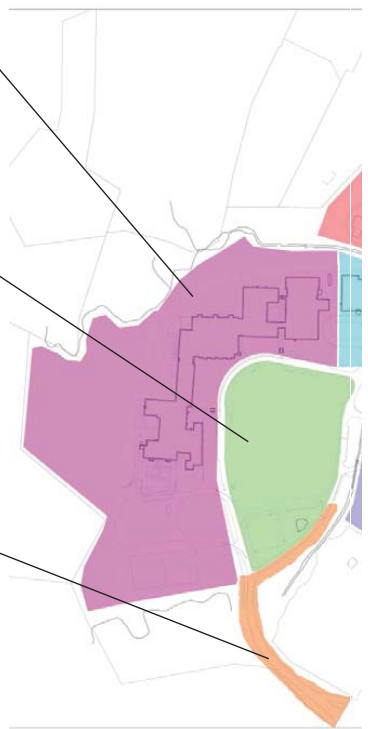
Field House Zone Considerations
Field House serviceability, condition; can walk to Hartwell Zone; possible swing space; least used parking during school day; regulatory considerations

Hartwell Zone Considerations
Viability of septic system; viability of Pods; Lincoln Road frontage; possible swing space; most heavily used parking area; some steep slopes; regulatory considerations



Ballfield Road Campus Master Plan Study - Public Workshop **LLB ARCHITECTS**
15 October 2015


Campus planning considerations - west side zones



School Zone Considerations
Character, condition, and functionality of the buildings; Smith parking; possible swing space

Center Field Zone Considerations
Central to campus character; athletic fields; septic field location; regulatory considerations; parking heavily used; frequent parking on grass; defined by the bus loop and buildings

Campus Entry Zone Considerations
Traffic flows within acceptable parameters; few accidents; good sight lines; intersection layout is acceptable; roadway is a little narrow; some delays during school dismissal; bus queueing along road; regulatory considerations



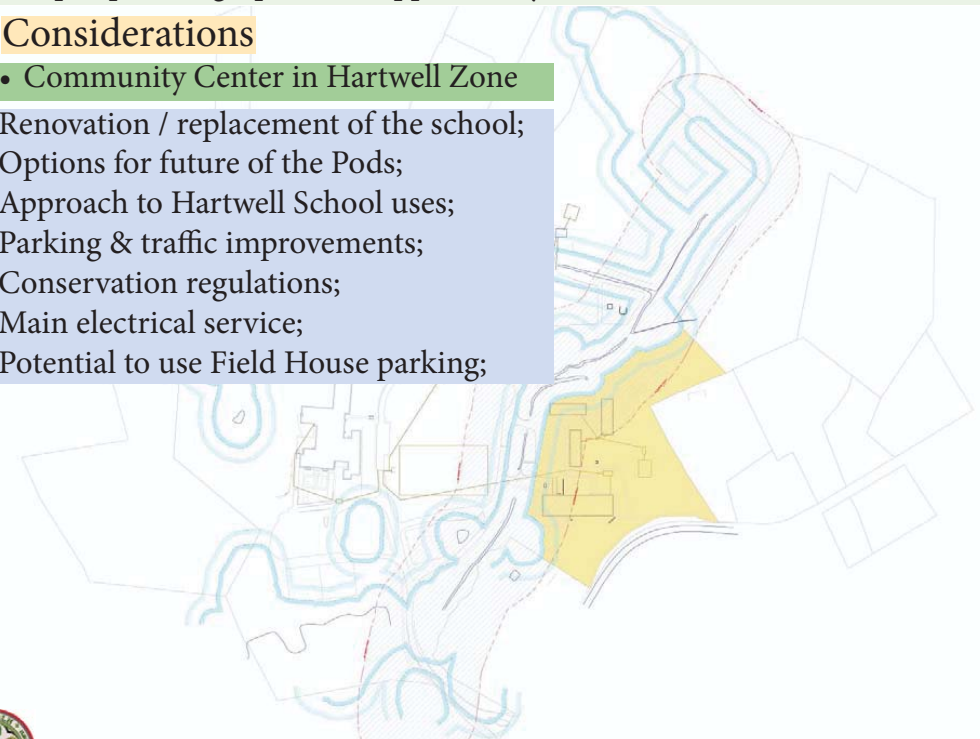
Ballfield Road Campus Master Plan Study - Public Workshop **LLB ARCHITECTS**
15 October 2015



Campus planning - potential approach - yellow

Considerations

- Community Center in Hartwell Zone

Renovation / replacement of the school;
Options for future of the Pods;
Approach to Hartwell School uses;
Parking & traffic improvements;
Conservation regulations;
Main electrical service;
Potential to use Field House parking;



 Ballfield Road Campus Master Plan Study - Public Workshop 
15 October 2015

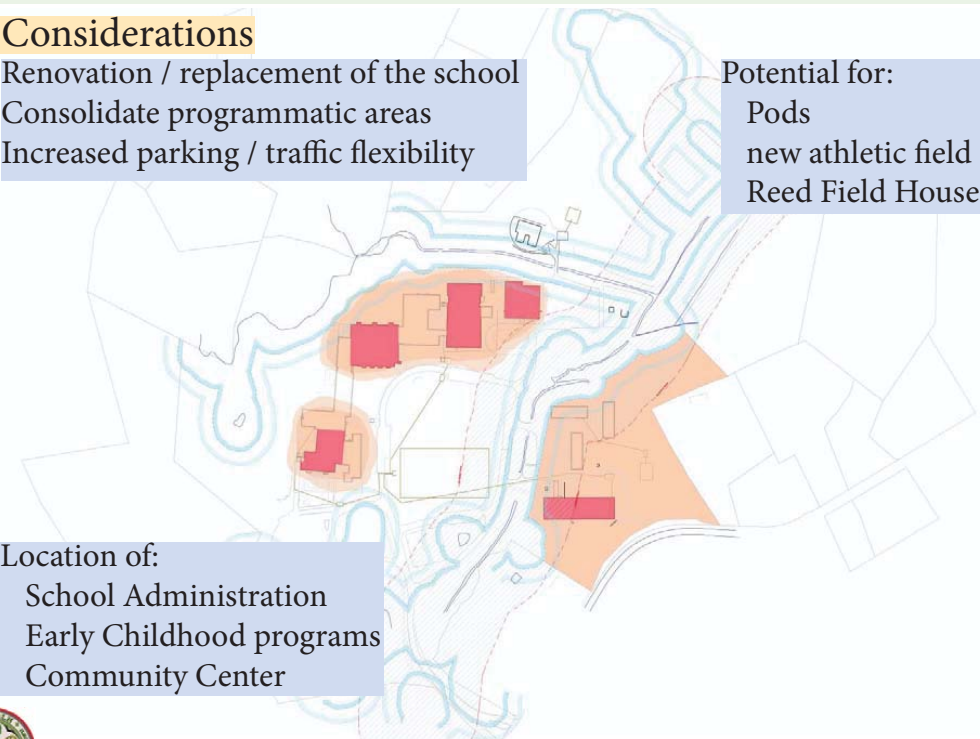
Campus planning - potential approach - orange



Considerations

Renovation / replacement of the school
Consolidate programmatic areas
Increased parking / traffic flexibility

Potential for:
Pods
new athletic field
Reed Field House

Location of:
School Administration
Early Childhood programs
Community Center



 Ballfield Road Campus Master Plan Study - Public Workshop 
15 October 2015

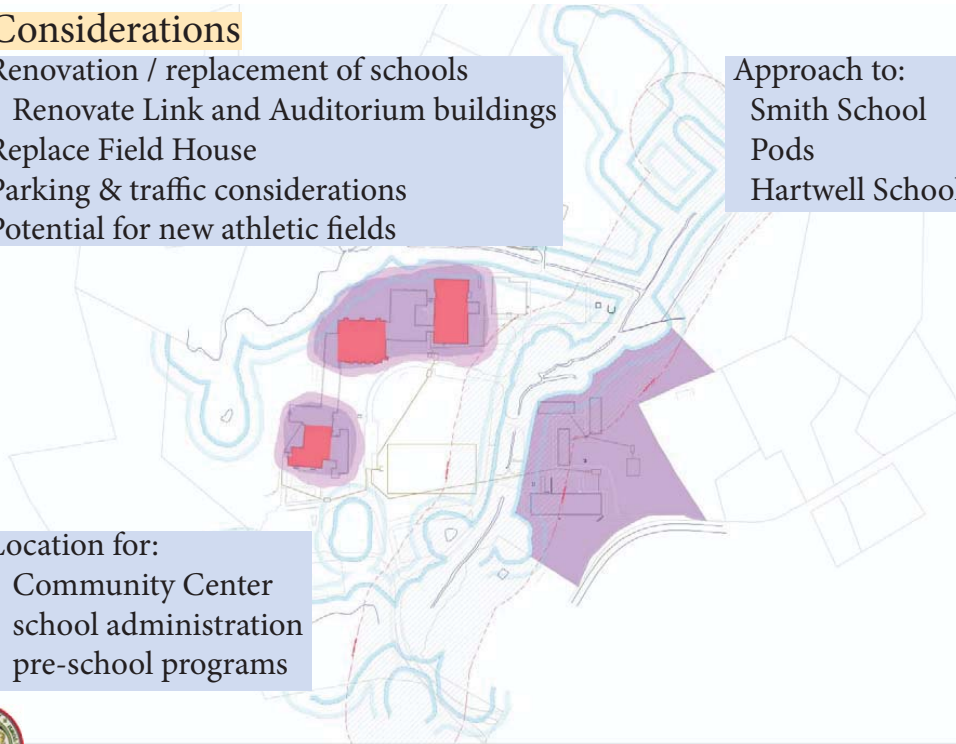
Campus planning - potential approach - purple

Considerations

Renovation / replacement of schools
Renovate Link and Auditorium buildings
Replace Field House
Parking & traffic considerations
Potential for new athletic fields

Approach to:
Smith School
Pods
Hartwell School

Location for:
Community Center
school administration
pre-school programs



Campus planning - questions to consider

If I could change 3 things on the campus I would...

My favorite aspect of the campus is...



Campus planning - questions to consider

In the future
the campus
will...

The campus
would be
better if...



Campus planning - questions to consider

I feel the
campus is most
importantly a...

What hasn't
been asked?



Public Input Activity

4 Stations; 10 minutes at each; 5 minutes to rotate

At each station the Public should:

- Draw or Comment directly on the maps
- Give opinions
- Offer solutions
- Consider suggestions from others
- Remember this is a programming activity not a design activity - only searching for where to locate the uses and how to use the land

To be followed by:

Final Wrap up for additional questions and statements



LLB ARCHITECTS

Moving forward - CMPC Public Forums:

Friday, October 30, 2015 from 8:15 - 10:00 A.M.
School Library Story Room
(Co-hosted with the Lincoln School PTO)

Friday, October 30, 2015 from 1:00 - 2:30 P.M.
Bemis Hall, 2nd Floor
(Co-hosted with the Council on Aging)

Saturday, November 14, 2015 beginning at 9:00 A.M.
Lincoln State of the Town Meeting
Brooks (Donaldson) Auditorium

Thursday, December 10, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room
Public Presentation of CMPC Draft Final Report



LLB ARCHITECTS

Moving forward - CMPC Meetings:

Monday, October 26, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room

Monday, November 9, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room

Friday, November 20, 2015 beginning at 8:15 A.M.
Hartwell Multipurpose Room

Monday, November 30, 2015 beginning 7:00pm
Hartwell Multipurpose Room



Moving forward - Online / Web resources:

Campus Master Planning Committee
page on town website : www.lincolntown.org.

School Building Advisory Committee (SBAC)
Final Report & Info: www.lincnet.org

Community Center Study Committee (CCSC)
Final Report & Info: www.lincolntown.org





Ballfield Road Campus Master Planning Committee

Public Forum
15 October 2015

Thank you!

LLB ARCHITECTS

October 15th Public Forum

Responses to question boards



If I could change 3 things on Campus I would...

71 responses total

Site - 10 responses

Parking

Enough parking near building entrances

Locate parking more proximal to entrances

Provide better parking for town events

Parking spaces large enough to accommodate SUVs and vans

Improve Smith parking

More usable Reed Gym parking - make it easier to get into Brooks and Hartwell from there

Tuck a few cars behind buildings for professionals to use

Make edges of parking neater - no mud

These responses show the desire for parking that is in proximity to the building entrances, adequate for modern vehicles, and not gathered into a large parking area.

Re-route the stream behind the back of Smith / Brooks

Reflects a desire for the campus to not be constrained unnecessarily by the streams and other natural elements.

Primary conclusion - provide parking in locations that best serve the buildings and fields without creating large parking lots.

**If I could change 3 things on Campus I would...
71 responses total**

Athletics / fields - 11 Responses

- Better quality soccer fields. Level and drained
- Running trails / track
- Allow fields to rest / find place for more
- Have more sports fields
- Improve athletic fields - currently the worst of most schools we visit
- Long term view of fields, turf or time for fields to grow
- Athletic fields not surrounded by roadways without barriers - dangerous!

Considerable desire for additional field and outdoor recreation space.

- Indoor pool
- Indoor play space for kids in the winter
- Indoor pool and / or track / fitness center
- Add an indoor pool

Desire for increased indoor recreational and play space is expressed a few times. The inclusion of a pool would require long-range consideration.

Primary conclusion - increase the number and quality of the fields.

If I could change 3 things on Campus I would...

71 responses total

Buildings; Schools - 25 responses

New school building

Build a new school

New school building

Fix the school

The school buildings; our kids deserve better!

Build compact multi-story K - 8 building

Build up to create more options

Improve the school buildings per SBAC recommendations

Modernize building spaces, repair roofs, infrastructure for the 21st century

Classrooms with smaller 'breakout' spaces for current teaching methods, e.g. working with sr

Find more physical resources to allow 5 - 8 to interact with K - 4

Connect all parts of the school in a 21st century building

Update school while keeping excellent learning

Reduce footprint of school (make two stories) to create more open land / fields

Connect the gym to the school

Playgrounds / outdoor learning

Cafeteria for schools and available for all

Have 2 cafeterias

Get a cafeteria or two that is permanent

Useful cafeteria

Real cafeteria

Fix the leaks

Have the temperature be controlled

Fix the roof in Brooks - buckets everywhere

Have working water fountains in our schools with safe drinking water

A strong desire for an educationally appropriate school facility.

If I could change 3 things on Campus I would...

71 responses total

Buildings; Non-schools - 12 responses

- Community center
- Remove the pods
- Community theater space
- Remove pods that take up too much usable flat land
- Flexible community cafeteria / open space
- Community center where the Hartwell pods are
- Buildings fit for purpose
- Build on the Reed Gym parking lot
- Build a community center
- Have the community center with its own parking
- Replace the Hartwell pods with more functional space for after-school and other community ;
- Wood shop in community center

Pods and Community Center appear to conflict

Circulation - 5 responses

- Separate kids and cars
- Pedestrian access
- Improve parking and pedestrian walkways
- The internal traffic flow / parking
- Pave bike path from Codman Pool to Sandy Pond Road

- Charge parents \$ to drive their kids to school
- Get parents to stop driving their kids to school

Desire to separate vehicles and pedestrians

If I could change 3 things on Campus I would...

71 responses total

Community - 3 responses

Voting function needs to be relocated to be more accessible
Intergenerational use would be great but functional school is a must
Integrate voting and learning

Other - 2 responses

Sustainability
I would have the 2011 school built by now with all that state money
Use some pervious surface pkg
Deal there and elsewhere with the poison ivy

My favorite aspect of the campus is...

32 responses total

Character - 15 responses

Central green

The way buildings are set into the landscape - natural appearance

Views across the many fields

The link between architecture and trees

The green

Center playing space with buildings set back from existing roadway

Green area outside is visually attractive

Setting in the woods

Open space

The special green / rural feel of it

Symbolic embrace of green / rural character by schools and other community uses

The circular green, the trees, the feeling

Natural setting

Buildings surrounding center green

The surrounding fields and woods

Primary conclusion - maintaining the connection to the green and the natural feel is important.

Community - 5 responses

It's the center of town. Kids there for school, adults there for meetings, Lana's walking. I like that it is geographically central, walkable to library and Donelans

Meeting everyone at pickup / drop off

Central location for so many activities, the hub of school, parks & rec, and accessible to natural trails, etc.

Its sense of isolation from the busy roads - a real campus feel

It's a great community focus / asset

Primary conclusion - retaining and enhancing the community aspects is important.

My favorite aspect of the campus is...

32 responses total

Architecture - 6 responses

Green space and Brooks auditorium

So much in one place, schools, gym, parks & rec, magic garden, auditorium

The way children move around the green as they get older. The connection to LEAP and Parks & Rec

The linked K - 8 school

Smith / Brooks library, which is underutilized

The connection of indoors and outdoors

Usability / Functionality - 4 responses

Everything is relatively close together; one stop shopping

That kids can go from school to activities without transport

Weekend sports

The trees and many adult and child play areas

Other - 2 responses

Dead end - no thru traffic

The history

Primary conclusion - The functionality and focus are central to the perception of the campus.

In the future the campus will...

32 responses total

Community - 16 responses

- Remain a point of pride for town residents
- Be safer for pedestrians
- Have multigenerational uses
- Encourage bicycle and pedestrian traffic over driving
- Give us a place to workout
- Be a gathering place for all townspeople
- Be the non-commercial focal point for all, not just families with K-8 children
- Be a great place for all; schools, exercise, CoA
- Safe for all age groups - Pre-K to old-K
- A place where generations mix, where no one gets lost
- Allow young and old to use the space together
- The center of town life for more than just families and tennis players - with a community center
- A shining example of community and educational excellence
- Meld our generations more fully
- Be a great community asset full of life all day long and weekends
- Provide a facility that all the community can use and enjoy year round

Primary conclusion - the campus is seen as a social hub, not just a school campus.

School - 12 responses

- Have a beautiful new school building
- Be virtual via internet learning - so, don't over invest in plant & equipment
- Facilitate multigenerational activities and world class learning
- Be a place where learning is enhanced
- Have enough space so that winter 'inside recess' could be in a gym instead of in the classroom
- Have updated buildings for the schools to support the vision of education
- Be functional, house a brand new eco-friendly school system
- An amazing place to learn and play
- Accommodate teacher's needs
- Would be better if schools did not leak, overheat, or have mold
- Have a substantially improved or new school building
- Allow for alternate forms of learning because of physical configuration

Primary conclusion - there is a strong desire for a modern school building.

Sustainability - 1 response

- Have solar panels to offset the energy we use

Other - 1 response

- Ultimately need more space; so consider buying adjacent properties if possible

Character - 2 responses

- Maintain the rural feel by 'hiding' parking areas to the outskirts or underneath
- Maintain its very special rural character

The campus would be better if ...

41 responses total

Site - 25 responses

Good/better pedestrian flow around the campus that's safe for kids

Good pedestrian walkways

Pedestrian walkways & protection

A paved bike path traveled from Codman Pool to Sandy Pond Road (currently grass path with 1 boardwalk)

"Guided" pedestrian access (crosswalks)

Sidewalks/paved pedestrian paths

There was a place to drop off kids. Can't drop off at main entrances because of busses. Can't use drop off lane near Smith because used for handicap unloading. Pedestrian paths allowing / encouraging students & seniors to mix & visit safely in campus.

Reed gym parking were more accessible from Hartwell/ (community center?)

The parking was improved

Parking spaces were large enough to fit the SUVs and vans we drive (Smith and Brooks)

Enough paved parking

Parking sited away from green and behind bldgs.

More parking was located closer to main entrances

The campus would be better if ...

41 responses total

Site - 25 responses

Could some tennis courts move to the town offices and use that space for administration offices?

Balls from the soccer field (green) didn't roll into the road.

Playing fields were improved

Addition of safe turf fields

Why do you think turf is safe?

The fields "rested"

The fields had a chance to rest, which means adding fields to meet demand

The playing fields were even & kept up

It's special, green rural character were maintained.

Utilize the space behind Hartwell

Leap was closer to the school complex

Primary conclusions - Pedestrian and vehicular separation is a concern. Adequate parking and athletic fields also a concern.

The campus would be better if ...

41 responses total

Buildings - 12 responses

The school buildings were rebuilt for the next generation

Totally renovate/new school

Facilities were upgraded - at minimum, repair roofs, a/c etc. - but also redesign classroom/shared spaces for the way teaching will be done.

The schools were up to code and beyond

Campus might be better if new school is a 3 story New England building, that allows removing of buildings on campus & freeing up space for community center

The gym was connected. All the school buildings were connected (Reed Gym)

If the schools / anywhere there was food service facilities

We had a cafeteria

If school didn't leak when it rained

Parks & Rec, COA & the schools could be together

The pods were gone

Open space is maximized (i.e.: buildings are consolidated & compact)

Primary conclusion - desire to replace the school.

The campus would be better if ...

41 responses total

Community - 3 responses

People could linger nearby before & after elections. Assuming we can continue to hold them here.

Voting was somewhere where school halls don't need to be guarded (Reed Gym?)
Voting & learning shared space

Other - 3 responses

Can't we consider buying the conservation land to the west of campus for additional playing fields

The town acquired the field west of Smith T-ball (past school garden) for playing field(s)

The residential property behind the pods were added to it, to get more non-wetland space for community center and parking

Transportation - 1 response

It didn't affect the long line at about 8 o'clock waiting to go north on Lincoln Road.

I feel the campus is most importantly a ...

30 responses total

Community - 15 responses

- A place for the community to come together
- Center/anchor of town
- Center of the town for children and families
- Great schools and a center of the town
- The town hub of activity
- A representation of our town
- Defines Lincoln
- Hub for all ages and life stages; learning, athletics/swimming, preschools/children; senior services(in future)
- A community within our community which enables & nurtures our educational, conservation, open space, multigenerational, athletic, recreational values and programs.
- A multi-purpose facility, not simply a school
- Community theater
- Place for kids to go to school and to play
- Safe place for kids
- Central multi-opportunity open book
- A magnificent green/rural feeling campus

Other - 3 responses

- The best expression of our shared values
- The only "Center" Lincoln has
- A town center

I feel the campus is most importantly a ...

30 responses total

School - 12 responses

Center for education

A school campus

School

A place for education

School & play space

A school campus

A school campus. Need to ensure appropriate education facilities first & foremost

Place to learn

Learning environment

Great schools

School campus

A very special school campus,

Primary conclusion - The campus is regarded as the core of the Lincoln ethos.

What hasn't been asked?

35 responses total

Schools - 7 responses

How does this campus process tie into school building process? I don't want this to hold up that.

Explored the benefits of outside learning? - benefits of multiple buildings? The 5 minute walk in fresh air can benefit learning esp. as kids are losing recess etc.

Can (or should) LEAP be moved to the Smith area to create more CC space?

What about building up?

Cost 1 building trade offs

Cost for ????????

Building new school as a multi story structure, set back off central green

Community - 4 responses

How are the population demographics changing?

Could we store election equipment on site?

Let's make sure we have good voting access for aging voters

Community center building, therefore wouldn't be so???? to Slutter building

Athletics - 8 responses

How important are the tennis courts?

Playgrounds and "outdoor classrooms"

Why can't we improve the condition of athletic fields?

Relocating tennis courts

Can tennis courts be relocated in town area used for parking/other use?

Relocating tennis courts

Better drained fields

Are there additional places where playing fields could be located?

Primary conclusion - there is some concern that the project address the future needs of the Town.

What hasn't been asked?

35 responses total

Site - 9 responses

Are we trying to do too much to this very special feeling/looking campus?

Have we considered a multiple building campus vs trying to lump everything into fewer buildings?

Underground Parking?

Vertical limitations?

Moving the tennis courts and using them for increased parking or buildings that need good access vs a court that serves 4 people at a time, only in good weather. They could be pushed back off prime location and do not need parking or easy access.

Flipping the campus so the littlest kids get dropped off at the circle by the auditorium in a safe place instead of the current place, which doesn't exist.

Create more open space on campus

Are we trying to do too much to this very special feeling/looking campus?

Will the campus be overburdened by development and thereby lose it's special Lincoln space character?

Primary conclusion - concern that the future development of the campus not change the feel.

What hasn't been asked?

35 responses total

Circulation - 9 responses

Does traffic flow/trends change later in the school year? Are we accounting for that?

What are safety implications of co-locating kids with elderly drivers?

How do we get parents to stop driving their kids to school?

Do we actually fast traffic? Slower traffic might actually be safer.

How to lay out pedestrian paths that allow students & seniors to visit each other safely on campus

What about handicap drop off?

H blocks off the regular drop off zone.

How do we encourage alternate transportation, not just cars - shuttle to library for South Lincoln?

Why not reduce pickup/drop-offs traffic by getting more kids to take the bus?

What hasn't been asked?

35 responses total

Other - 4 responses

How many more committees & explanative studies do we need before there's action on a new school?

Can the town purchase more land adjacent to this campus to lend more flexibility for fields or parking or administrative buildings?

Most cost effective solution?

Could we enhance our campus by acquiring adjacent properties?

Sustainability - 2 responses

How do we make the buildings greener?

Solar power?

October 15th Public Forum

Comments on maps



Yellow Option	Location of Sticky on Map	Comments
Yellow Option - Possible specific location within Hartwell = 10		
Green tags	Buffer between Pod B & C	this is the place!
	Hill behind Pods/Near Stream	Really want Community Center located here - while leaving all other options for school on the table
	Pod A/Parking Lot	best location for community center
	Pod C/behind Pod A	Community Center in Hartwell pod area - two story to reduce footprint (?)
	Behind Pods/East of Hartwell	Community Center must go here
	Hartwell Bldg	Community Center on Pods/Hartwell site; Manage parking using Reed Gym spaces & get waivers re Wetlands
	Hartwell Zone	I liked the building proposed by the Community Center Study Committee. It connected to Hartwell which provided handicapped access to (unintelligible)
Comments on map	Hill behind Hartwell Zone	Locate Comm. Center here (into hill); allows more parking @ Pod area
	Hartwell Bldg	Use this for COA. New bldgs school focused (*unsure about second half of comment)
	Hartwell Zone	Connect Community Center to Hartwell
Yellow Option - Like Community Center in Hartwell zone (generally) = 9		
Green tags	Hartwell Zone	Knock down 2 pods & put curved bldg as far back as poss
	Hartwell Zone	The Pods should go. This will free up enough area to have the new community center <u>plus</u> other current pod uses.
	Hartwell Zone	Gives us more flexibility to make best use of the campus and also most likely to be tolerated
	Smith Tennis	Preserve existing buildings and uses in existing locations to minimize risk to MSBA funding. Use one of the open spaces on the site for the comm. Ctr. Parking lot next to Reed, Tennis Courts, Behind the Pods
	East of Campus	Hartwell area best for Community Center
Yellow tags	Behind Hartwell	Hartwell site <u>can</u> accommodate community center, preschools, and parking with creative planning
	Hartwell Zone	Best access location for Comm. Center

Comments on map	Stream between Hartwell/Reed	Pedestrian access. Parking for both areas
	Between Reed/Hartwell	Access to Community Ctr space (with a proposed path drawn on map over stream)
Yellow Option	Location of Sticky on Map	Comments
Yellow Option - comment focused on/mentions parking = 9		
Green tags	Smith Tennis	Preserve existing buildings and uses in existing locations to minimize risk to MSBA funding. Use one of the open spaces on the site for the comm. Ctr. Parking lot next to Reed, Tennis Courts, Behind the Pods
	Hartwell Bldg	Community Center on Pods/Hartwell site; Manage parking using Reed Gym spaces & get waivers re Wetlands
Yellow tags	Playground @ Reed	this under utilized playground could be better employed - extra parking for pool?
	Behind Hartwell	Hartwell site <u>can</u> accommodate community center, preschools, and parking with creative planning
Red tags	Center Field	No buildings or parking on center green
Comments on map	Hartwell Zone	More Parking here
	Hill behind Hartwell Zone	Locate Comm. Center here (into hill); allows more parking @ Pod area
	Stream between Hartwell/Reed	Pedestrian access. Parking for both areas
	North of Campus	Keep parking & driveways for Com. Ctr away from school
Yellow Option - comments for on fields or rec space = 7		
Yellow tags	Hay field behind Smith	Can this be used for sports?
Red Tags	Near Smith Fields	Better to consolidate buildings (and improve amount of fields & rec. space)
Comments on map	Behind Hartwell (old location)	New playground here
	Behind Hartwell (old location)	The teachers hated this location for a playground
	At Ballfield / Lincoln	Hardest to get more field space with this plan.
	Codman softball field	More fields
	Center Field	Horrible location for sports fields with roadway surrounding; balls & kids always in roads

Yellow Option	Location of Sticky on Map	Comments
Yellow Option - Demolish a particular building = 6		
Green tags	Hartwell Zone	Knock down 2 pods & put curved bldg as far back as poss
	Hartwell Zone	The Pods should go. This will free up enough area to have the new community center <u>plus</u> other current pod uses.
Red tags	Near Smith Fields	Better to consolidate buildings (and improve amount of fields & rec. space)
Comments on map	Hartwell Zone	Pods expendable
	East of Campus / Hartwell	Get rid of Pods; old & bad
	Reed Gym	Lose this ugly bldg.
Yellow Option - General comments = 6		
Yellow tags	Behind Hartwell	Ok - but least amount of room for creativity
Comments on map	North of Campus	Prefer to locate the community center where it would cause the least disruption & least expense
	Smith Tennis Courts	has anyone looked at tennis courts site
	Bus Loop	curb stones
	Between Brooks/Reed	Build here
	Property due east of Hartwell	Acquire this property
	Yellow Option - Keep current buildings = 5	
Green tag	Smith Tennis	Preserve existing buildings and uses in existing locations to minimize risk to MSBA funding. Use one of the open spaces on the site for the comm. Ctr. Parking lot next to Reed, Tennis Courts, Behind the Pods
Comments on map	Hartwell Zone	Keep Hartwell well-maintained fully-used
	Pod B	Maybe keep this Pod
	Hartwell Bldg	Use this for COA. New bldgs school focused (*unsure about second half of comment)
	Hartwell Zone	Connect Community Center to Hartwell

Yellow Option	Location of Sticky on Map	Comments
Yellow Option - comment focused on Pedestrian safety = 3		
Green tag	East of Campus near Lincoln Rd	Just separate kids walking from Comm. Ctr parking
Comments on map	Stream between Hartwell/Reed	Pedestrian access. Parking for both areas
	Center Field	Horrible location for sports fields with roadway surrounding; balls & kids always in roads
Yellow Option - Improvements to Schools/other programs on campus = 3		
Red tags	Near Smith Fields	Better to consolidate buildings (and improve amount of fields & rec. space)
	Smith Bldg.	Most important - new building for 2 - 3, 4 -5 at Smith
Comments on map	East of Campus / Hartwell	Make Community Center big enough to hold the shop & the after school program
	Center field near Smith	Put LEAP in new school bldg
Yellow Option - Blank sticky notes on map = 2		
Green tags	East end of Hartwell Zone	Blank sticky - silent vote or stray sticky?
	East of Hartwell	Blank sticky - silent vote or stray sticky?

Orange Option	Location of Sticky on Map	Comments
Orange option - Specific Community Center Location = 11		
Green tags	Front of Smith	Prefer Sr. Center off site. If on site - Kinder. Wing & Smith Gym. Move tennis courts for more parking.
	Hartwell zone	Knock down Pods A & C to make space for community center plus replacement space
	Stream front of Hartwell	Community Center by stream; 2 story parking behind it; Pods are gone
Yellow tags	Near Ballfield/Lincoln Intersection	space that was formally playground might work
	Smith Building	won't be a good community ctr
Red tags	Smith/Link Connection	I THINK WE SHOULD <u>NOT</u> PLACE COM. CTR. IN THE SCHOOL.
	Reed Parking Lot	Keep current bldgs & locations for current school uses to minimize risk to losing MSBA funding. Put comm center at parking area next to Reed or on current tennis which can be relocated
Comments on map	on Hartwell	Hartwell well suited to early childhood ed & admin - don't waste money moving them
	on Hartwell	Hartwell NOT suited to repurpose for community center
	Reed Parking Lot	Can we put a Community Center here?
	Hill behind Pods	*this was a sketch with Community Center footprint labeled, and new parking east of footprint and an access drive (to the north) down to existing Hartwell parking lot
Orange option - Keep Various Buildings = 8		
Orange option - Keep Various Buildings = 8		
Orange Option	Location of Sticky on Map	Comments
Green tags	On Lincoln Rd. near Hartwell	Good to keep all these if really in good enough condition
	Hartwell Parking Lot	This plan makes most sense. Keep Hartwell, ditch the Pods, put Community Center here, attach LEAP to Reed Gym.
	Hartwell zone	Knock down Pods A & C to make space for community center plus replacement space
Red tags	Center Field	Don't remove any Smith, Brooks buildings, keep linked buildings and keep green open.
	Over Pods	two story community center - keep schools 1 story
	Reed Parking Lot	Keep current bldgs & locations for current school uses to minimize risk to losing MSBA funding. Put comm center at parking area next to Reed or on current tennis which can be relocated

Comments on map	on Hartwell	Hartwell well suited to early childhood ed & admin - don't waste money moving them
	Between Brooks/Reed	New LEAP space here so it can also use Reed Gym
Orange option - Parking Coments = 7		
Green tags	Front of Smith	Prefer Sr. Center off site. If on site - Kinder. Wing & Smith
	Stream front of Hartwell	Community Center by stream; 2 story parking behind it; Pods are gone
	West side of Stream at Hartwell	Preserve informal parking along center green during sporting events
	Stream between Reed/Hartwell	Work out a way across the wetlands to the under used Gym parking lot. To provide parking for new community center in the Pods area
Yellow tags	Hill behind Pods	Use pavers or pervious surfaces for parking lots so buffer zones can be used for parking
Comments on map	Property Adjacent due east of Hartwell	Adding this property would add more space for community center with parking where pods were.
	Hill behind Pods	*this was a sketch with Community Center footprint
Orange option - Demolish Various Buildings = 4		
Green tags	Hartwell Parking Lot	This plan makes most sense. Keep Hartwell, ditch the Pods, put Community Center here, attach LEAP to Reed Gym.
	Hartwell zone	Knock down Pods A & C to make space for community center plus replacement space
Yellow tags	East of Hartwell	REMOVE PODS
	East of Hartwell	- <u>I agree!</u> (an added comment to "REMOVE PODS" sticky)
Orange Option	Location of Sticky on Map	Comments
Orange option - Building Configuration = 4		
Green tags	on Link Library	build a two story school
Yellow tags	Near Codman Pool	Avoid 2nd story because of cost - elevators etc.
Red tags	Center Field	Don't remove any Smith, Brooks buildings, keep linked buildings and keep green open.
	Over Pods	two story community center - keep schools 1 story

Orange option - General = 4		
Yellow tags	Behind Smith/Smith 2 Field	could we re-route the stream (westward)?
	North end of Codman Zone	Blank sticky - silent vote or stray sticky?
Red tags	East of Hartwell	Blank sticky - silent vote or stray sticky?
Comments on map	South of Lincoln Rd, above Map Key	* Could we use tennis court space?
Orange option - General Community Center Location = 3		
Green tags	Hartwell Parking Lot	This plan makes most sense. Keep Hartwell, ditch the Pods, put Community Center here, attach LEAP to Reed Gym.
	Hartwell Zone	I believe the Com. Ctr. Should be in this loc
	Stream between Reed/Hartwell	Work out a way across the wetlands to the under used Gym parking lot. To provide parking for new community center in the Pods area
Orange option - LEAP / After school = 2		
Red tags	Center Field	After school programs MUST BE on campus! (spoken as a grandmother)
Comment on map	Between Brooks/Reed	New LEAP space here so it can also use Reed Gym
Orange option - Pedestrian Safety = 1		
Yellow tags	Center Field	The best way to locate walking paths is to watch where people walk - then put them there. That's what they did at my college. It worked well.

Purple Option	Location of Sticky on Map	Comments
Purple Option - Parking / Road Layout = 11		
Green tags	Lincoln Rd/South of Hartwell	Pods should be replaced - locate community center there? And reconfigure parking to add spaces
	Hartwell Zone	Build facility close to the road & put parking behind (presume Lincoln Rd is intended "road")
	Pod A/B	Expand this property for the <u>Senior Center: housing and parking spaces</u>
	Behind Pod C/hill	Could we locate the Senior Center on <u>this spot</u> , accessed by a stream crossing from the Reed parking lot
	North of Campus	Parking Garage
Yellow tags	Bus Loop @ Brooks	Can perimeter road be relocated to <u>behind</u> buildings? Open space w/ fields & walkways.
	Reed parking lot	preserve green by keeping parking in background
Comments on map	Bus Loop	Idea - Move loop to exterior of buildings
	North of Campus	Idea - Put ring road behind buildings; outer perimeter of space
	North of Campus	Idea - Underground parking garage
	North of Campus	(referring/adding onto comment above) ... or above ground (at least in part?)
Purple Option - General Comments (hard to group) = 9		
Green tags	Pod A/Parking Lot	The campus has a modernist building heritage, low, understated buildings - and that seems to work here.
	Hayfield behind Smith	1) Great - Preserve "L", 2) Make long term decisions on replacing bldgs., 3) Don't renovate unless savings are more than 15%
Red tags	Smith Bldg	(something) works well - don't change it
	Hayfield west of campus	Too much work & \$\$
	Hayfield west of campus	I'm writing - but I'm not sure that the Town would be up for this
Comments on map	Hartwell Zone	Preschool shouldn't be in same building as K - 8, so if raze Hartwell, have to build a new preschool, unless have separate PreK - 5/8 and middle school.
	Stream @ Hartwell Parking	Idea - Make the water more visible, present?
	Codman Picnic area	3 tables & grill are a memorial to 3 boy scouts who died in a traffic accident (in the 70's)
	North of Campus	Paint back of Reed Gym to camouflage the large white building's heavy visual impact from Sandy Pond Rd.

Purple Option	Location of Sticky on Map	Comments
Purple Option - Specific Community Center Location = 7		
Green tags	Hartwell Zone	Build facility close to the road & put parking behind (presume Lincoln Rd is intended "road")
	Behind Pod C	Good spot for Community Ctr
	Behind Pod C	Pods area is _____ the best option! (can't read hand writing)
	Behind Pod C/hill	Could we locate the Senior Center on <u>this spot</u> , accessed by a stream crossing from the Reed parking lot
Yellow tags	Hartwell Zone	Strats space should be left undeveloped (a scribble) from the road, the open view to campus is nice - but has planting.
	Behind Hartwell	Strats place should be preserved as open area or playground to preserve natural area from Lincoln Road.
Comment on map	Hill behind Pods	Idea - A building on this hill would have a great view (J.B.)
Purple Option - Configuration of School or other buildings = 7		
Green tags	Hayfield behind Smith	1) Great - Preserve "L", 2) Make long term decisions on replacing bldgs., 3) Don't renovate unless savings are more than 15%
	Center Field	Best to consolidate buildings & maximize fields & other outdoor uses
Yellow tags	Smith Bldg	Keep K - 8 schools linked together somehow
	Smith Fields behind bldg.	One connected school for all ages is important for flexibility as # of kids per grade level waxes & wanes
Red tags	Smith Bldg	Don't remove any Smith, Brooks buildings. Keep linked buildings. And keep green open
12 comments	Hartwell Zone	Preschool shouldn't be in same building as K - 8, so if raze Hartwell, have to build a new preschool, unless have separate PreK - 5/8 and middle school.
Comment on map	Front of Brooks	2-story school would leave more space for fields
Purple Option - Athletic Fields or Rec Uses = 6		
Green tags	Hayfield behind Smith	Can we get rid of the poison ivy and have another field?
	Center Field	Best to consolidate buildings & maximize fields & other outdoor uses
Yellow tags	Bus Loop @ Brooks	Can perimeter road be relocated to <u>behind</u> buildings? Open space w/ fields & walkways.
	Smith Tennis Courts	Preserve tennis courts - public clay courts are a rarity and they have historic value
Red tags	Smith Tennis Courts	Athletic fields for adults to be considered/preserved: tennis courts, softball field for adult softball/lacrosse/soccer
Comment on map	Front of Brooks	2-story school would leave more space for fields

Purple Option	Location of Sticky on Map	Comments
Purple Option - Keep Various Buildings = 5		
Green tags	Hill behind Pods	Keep or find a home for LEAP
	Smith Bldg	Smith school unique facility to be preserved for: boy scouts, voting, square dances, back to school night, math fair, movie nights, disaster shelter, science fair, plays, Saturday B-ball, girl scouts
Red tags	Smith Bldg	Don't remove any Smith, Brooks buildings. Keep linked buildings. And keep green open
	Hartwell Bldg	Doesn't make sense to tear down Hartwell but get rid of Pods - old, poorly-configured, in poor condition
	Smith Bldg	Don't mess with where the school is or Hartwell
Purple Option - Buy more property = 5		
Green tags	Pod A/B	Expand this property for the <u>Senior Center: housing and parking spaces</u>
	Property East of Ballfield Rd	Buy houses abutting Lincoln Rd & Ballfield Rd to house the Administration or nursery school, etc.
	Property West of Ballfield Rd	Let's buy this property
	Abutting portion of Hayfield behind Smith	Let's buy property & use as fields (sale turf)
	Abutting portion of Hayfield behind Smith	Yes! (on sticky with above statement)
Yellow tags	Property between Ballfield Rd / Hartwell	let's buy this property
Purple Option - Demolish Various Buildings = 4		
Green tags	Lincoln Rd/South of Hartwell	Pods should be replaced - locate community center there? And reconfigure parking to add spaces
	Center Field	Best to consolidate buildings & maximize fields & other outdoor uses
Red tags	Front of Link/Smith	Lose the Field house - build over here
	Hartwell Bldg	Doesn't make sense to tear down Hartwell but get rid of Pods - old, poorly-configured, in poor condition

Purple Option	Location of Sticky on Map	Comments
Purple Option - General Location of Community Center = 3		
Green tags	Lincoln Rd/South of Hartwell	Pods should be replaced - locate community center there? And reconfigure parking to add spaces
Yellow tags	North corner of campus behind Smith/Link	I think the Pods/Hartwell area is the best. This option keeps them "in play", as opposed to the middle option
Red tags	North corner of campus behind Smith/Link	CC only in Hartwell
Purple Option - Pedestrian Safety = 2		
Yellow tag	Bus Loop @ Brooks	Can perimeter road be relocated to <u>behind</u> buildings? Open space w/ fields & walkways.
Comment on map	North of Campus	Idea - Walking only tunnel under green center to connect uses

October 30th PTO and COA Forums

Contents:

Presentation

Question boards

Responses to question boards



October 30th PTO and COA Forums

Presentation

(The two presentations were the same, with no variations for the particular forum)



Ballfield Road Campus Master Planning Committee

Community Meetings
Parent Teacher Organization
Council on Aging
30 October 2015

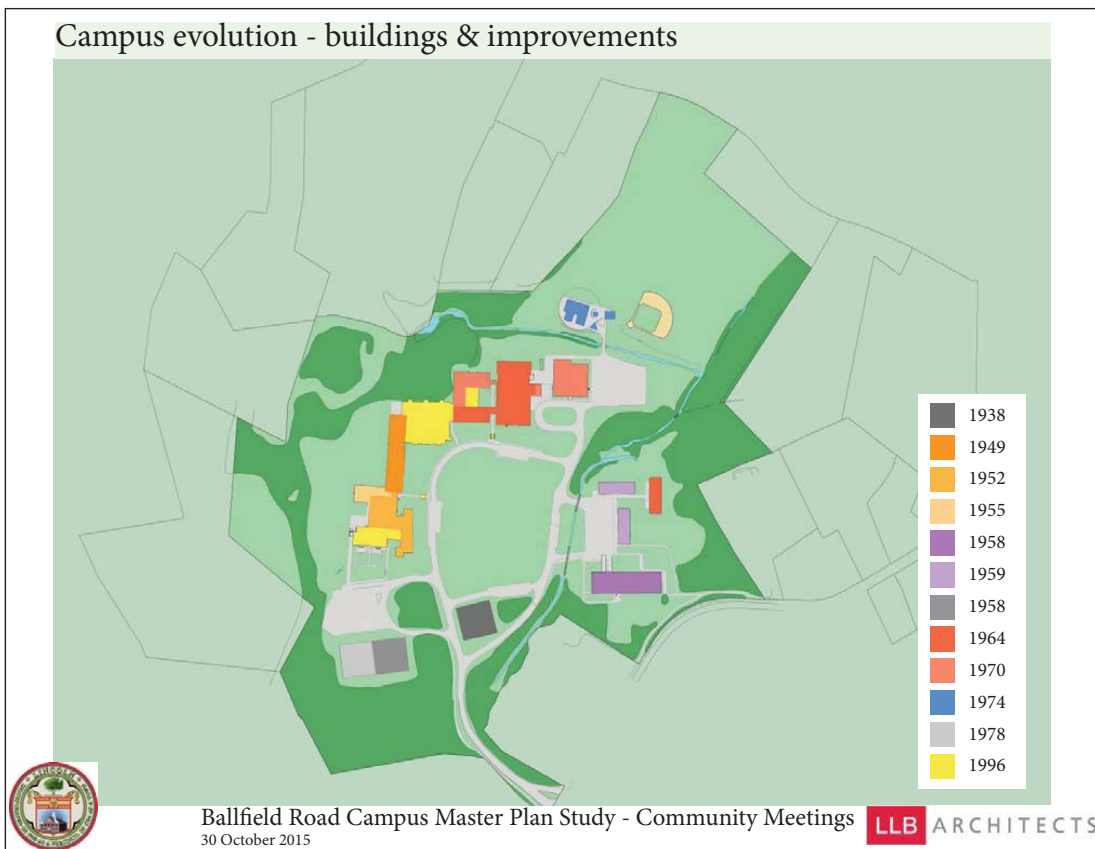
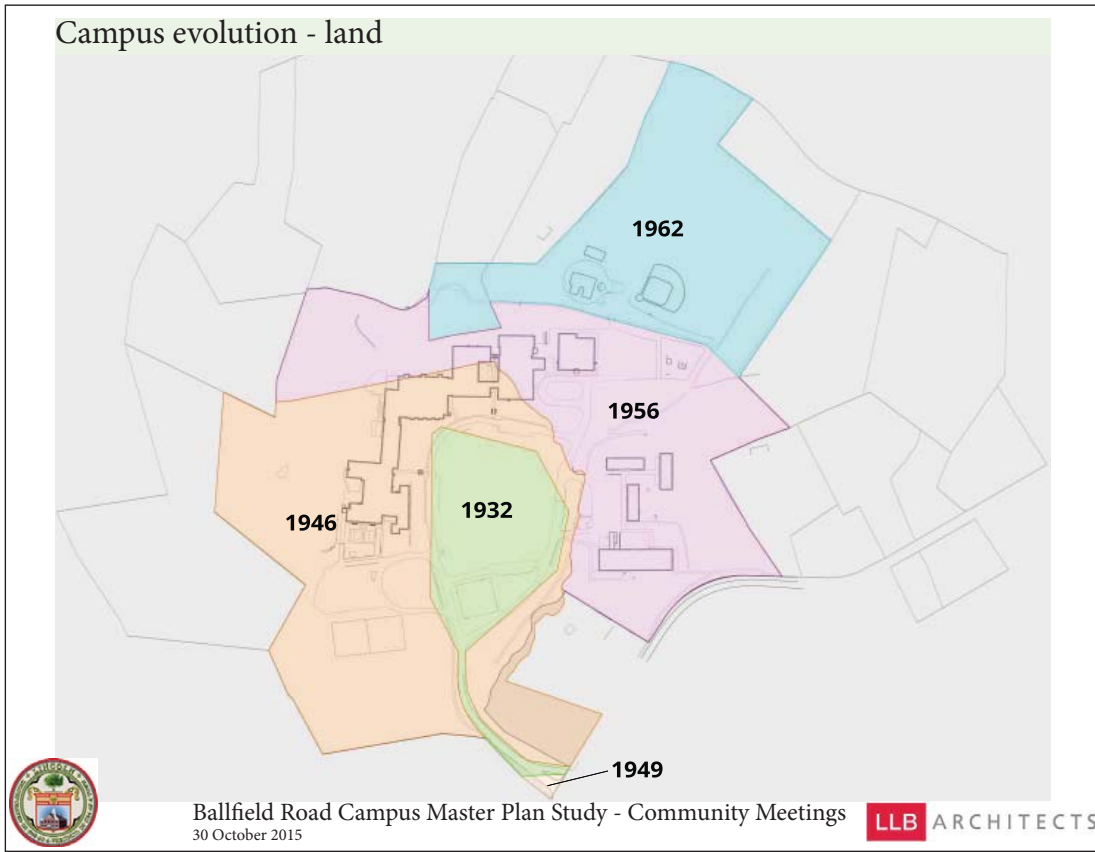
LLB ARCHITECTS

Campus Analysis

Historic, Current, & Future Uses
Site Information



LLB ARCHITECTS



Campus character - representative images



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30 October 2015

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Campus character - representative images



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Campus character - representative images



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LLB ARCHITECTS

Campus Master Planning Committee Charge

...to inform the planning for the contemplated school building and community center projects.

...produce a final report that confirms the existing uses and needs for space on the campus, anticipates potential future uses, assesses the capacity of existing infrastructure to support existing and projected uses...



Ballfield Road Campus Master Plan Study - Community Meetings
30 October 2015

LLB ARCHITECTS

Master Plan - interim thoughts:

Regulatory - current conservation regulatory zones do not appear to impose unreasonable constraints

Septic - continued use of systems appears feasible

Athletic fields - limited field availability; could use more

Buildings - existing buildings have functional & physical limitations

Traffic - typical for a school campus; Ballfield Road acceptable; on-site drives could be improved

Parking - just adequate for school use; more will be needed

Options - no factors found preclude locating the community center on the campus; there are a variety of potential solutions



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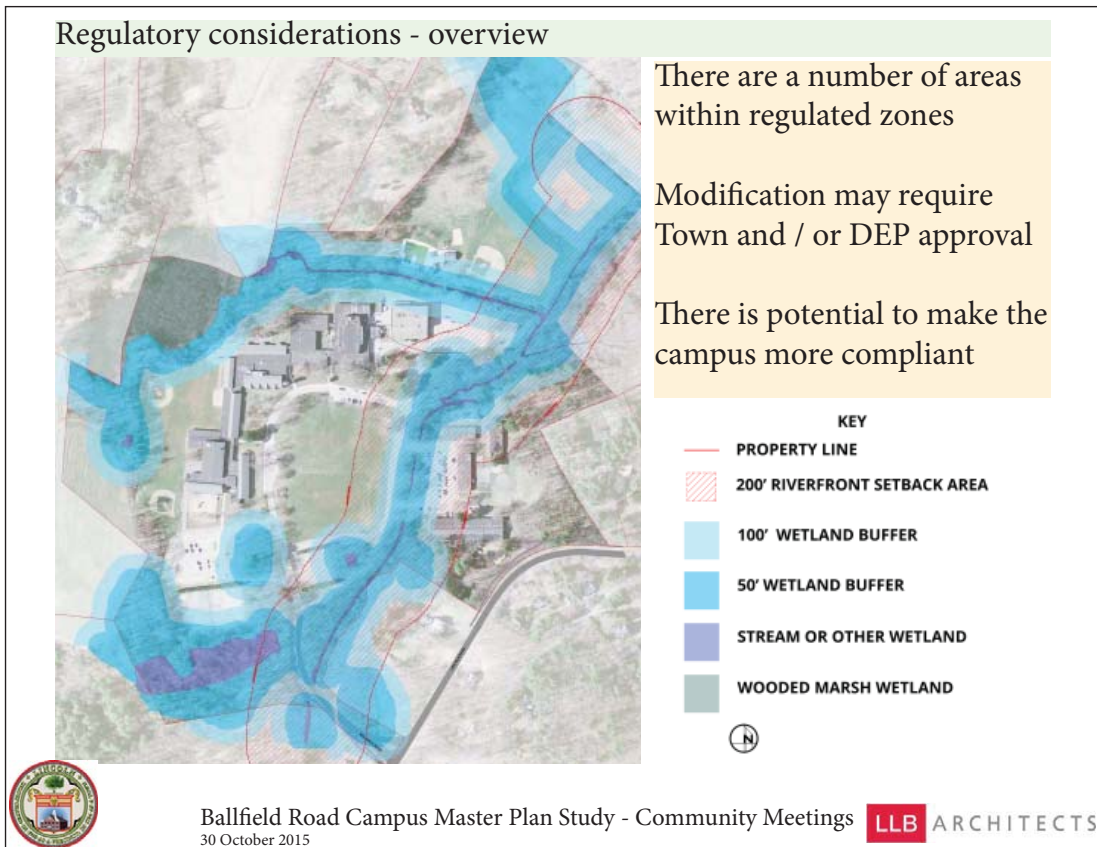
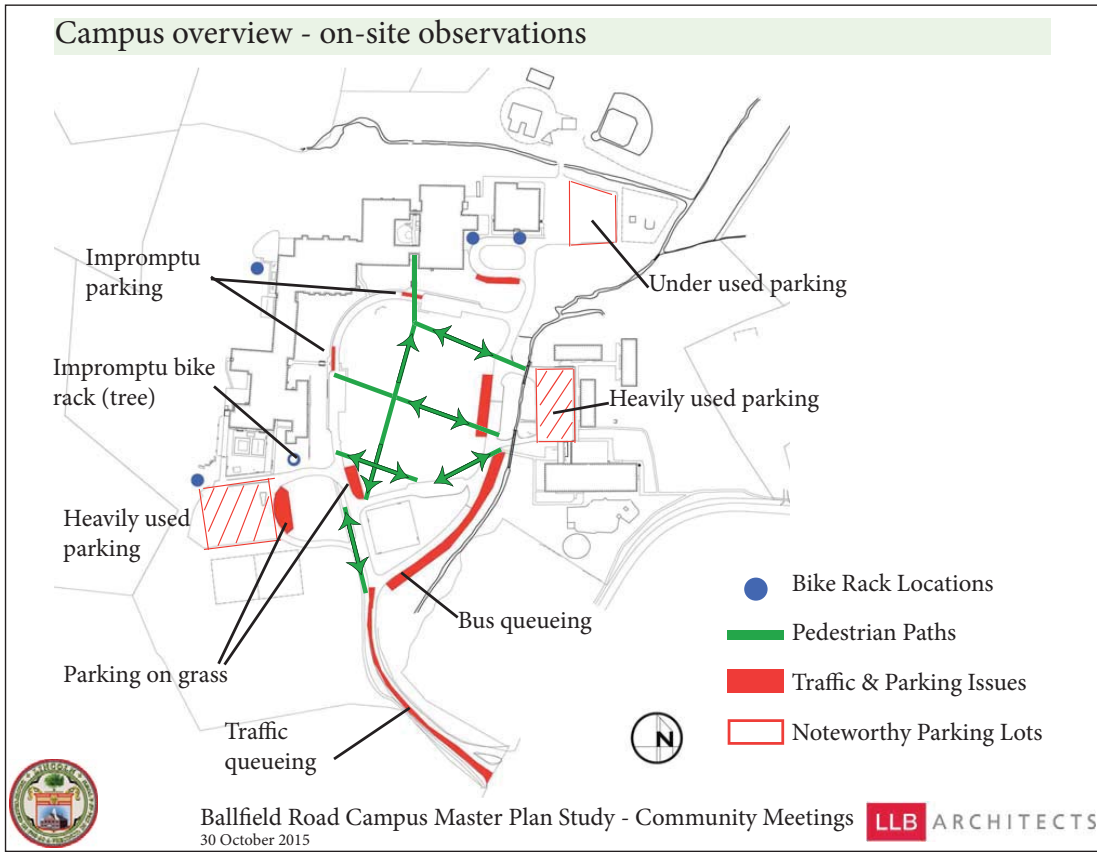


Things we have heard . . .



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Sewage disposal - overview

There are 3 systems

Codman Pool

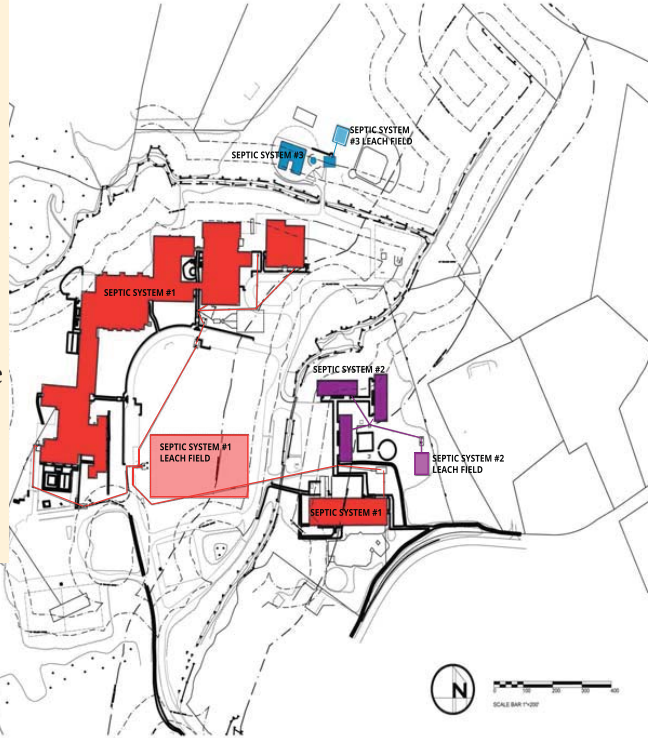
Pods

Hartwell & Schools

Modification will require
MA DEP approval

The system serving the
Pods may be able to serve
a community center

An on-site treatment
plant may be an option



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Athletic Fields - overview

Scheduling constraints

Fields over played / used

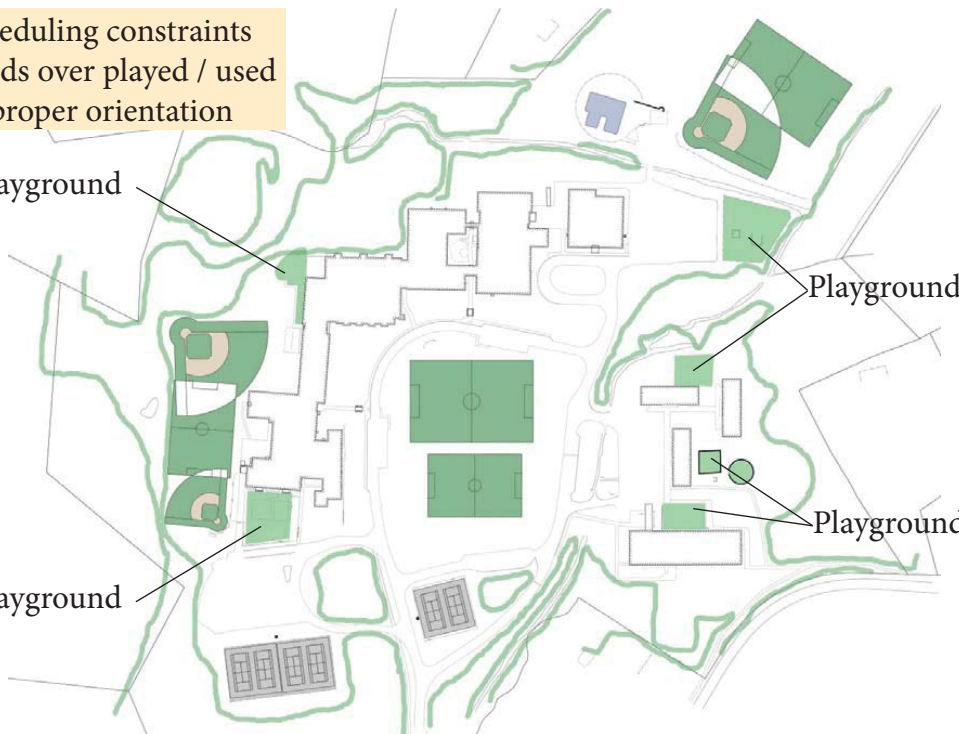
Improper orientation

Playground

Playground

Playground

Playground



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Buildings -

“useable”, “significant”, “code issues”, “not appropriate”, “part of the campus”, “characterful”, “iconic”, “need repair”,



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Buildings - interim thoughts:

Hartwell Building - functional building; design may restrict future uses

Pods - limited viability; perhaps suitable for swing space

Brooks / Reed Gym - functional space with active school and community use; no physical connection with school imposes limitations

Brooks School - building needs renovation; auditorium is a useable space

Smith School - building needs renovation; gym is a functional space

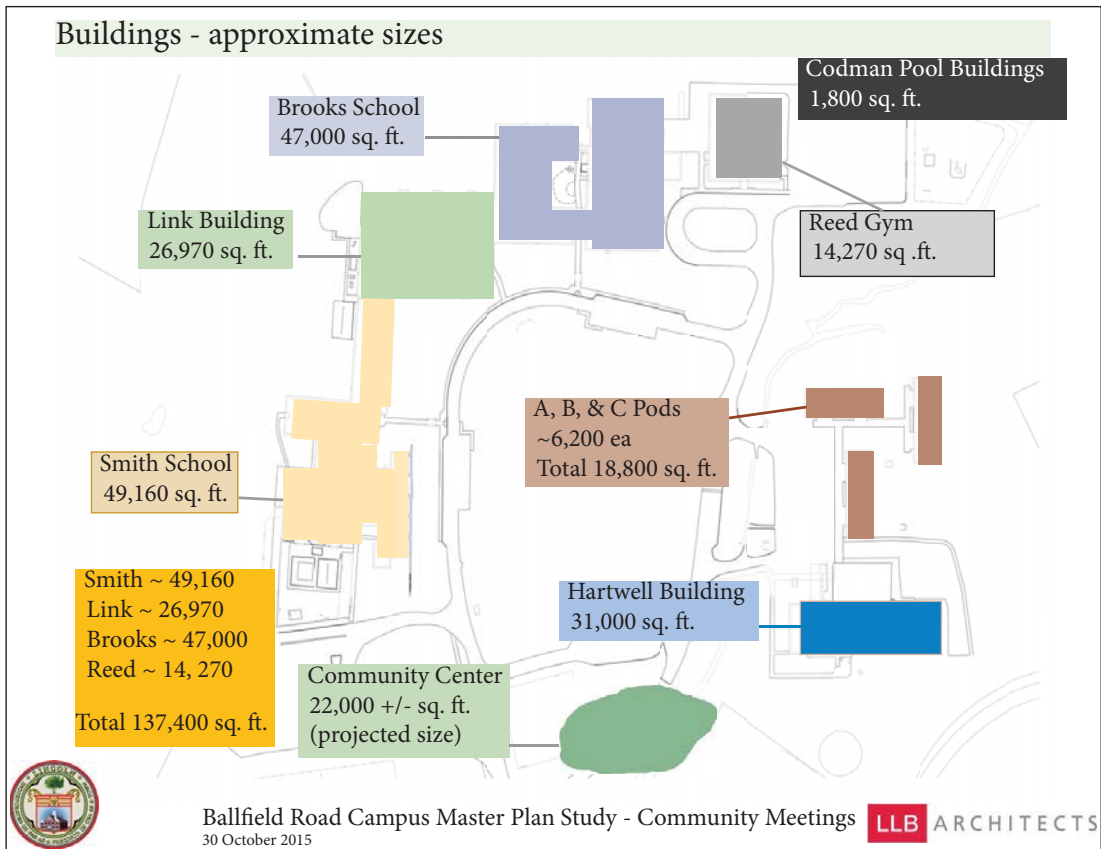
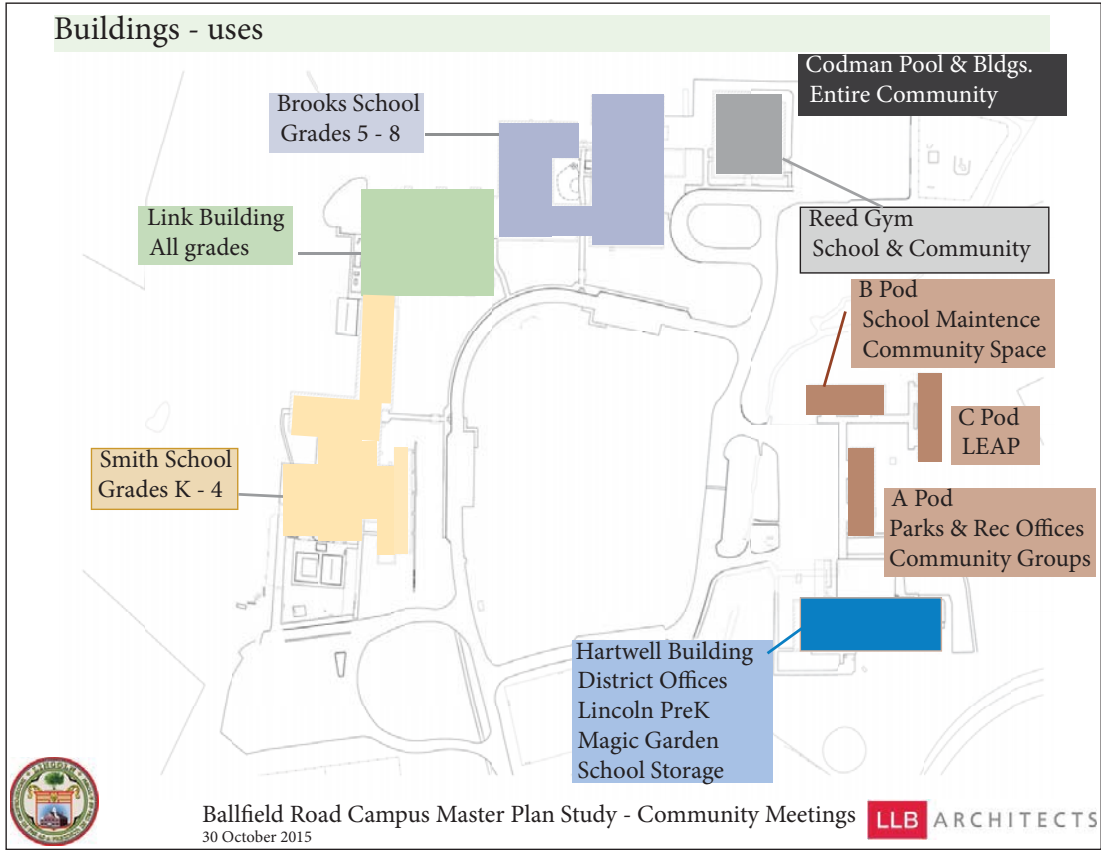
Library Link - building provides open space

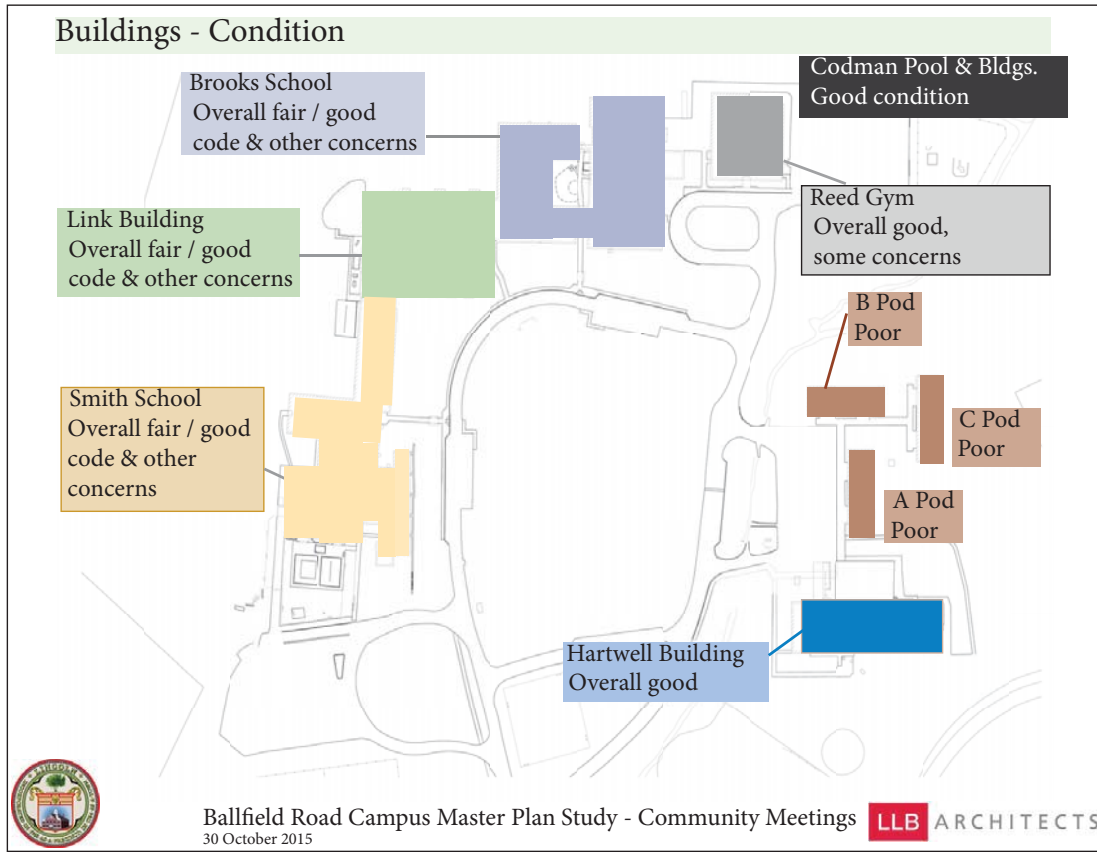
Codman Pool - good condition; functionally appropriate



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Traffic -

“too many delays”, “dangerous”, “no capacity”,
“confusing”, “no loading dock”, “buses cause problems”



Traffic - interim thoughts:

Ballfield Road

- Traffic flow is typical of a school campus or driveway
- Weekday traffic volume is about 15% of the total Lincoln Road volumes
- Longest exiting delays are associated with school dismissal
- Peak delay period lasts about 15 minutes
- Other events can cause short-lived exiting queues as well

Intersection of Ballfield Road and Lincoln Road

- Has adequate capacity for current traffic volumes
- Could accommodate new trips generated by a Community Center
- Coordinated schedules of events and activities will be very important

On-site drives

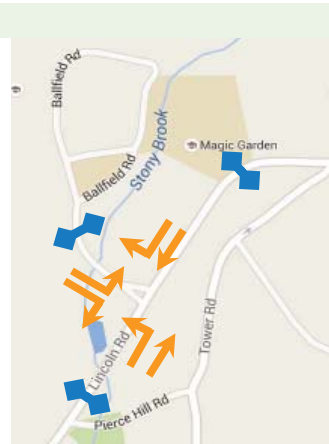
- Physical layout is functional, but not ideal
- Parking in non-designated spaces creates traffic impediments
- Staging of buses along Ballfield Road limits vehicle travel



Traffic - methodology

Lincoln Police

- Placed Automatic Traffic Recorders
- Counted at three locations
- Counted in August and September
- Measured volume and traffic speeds

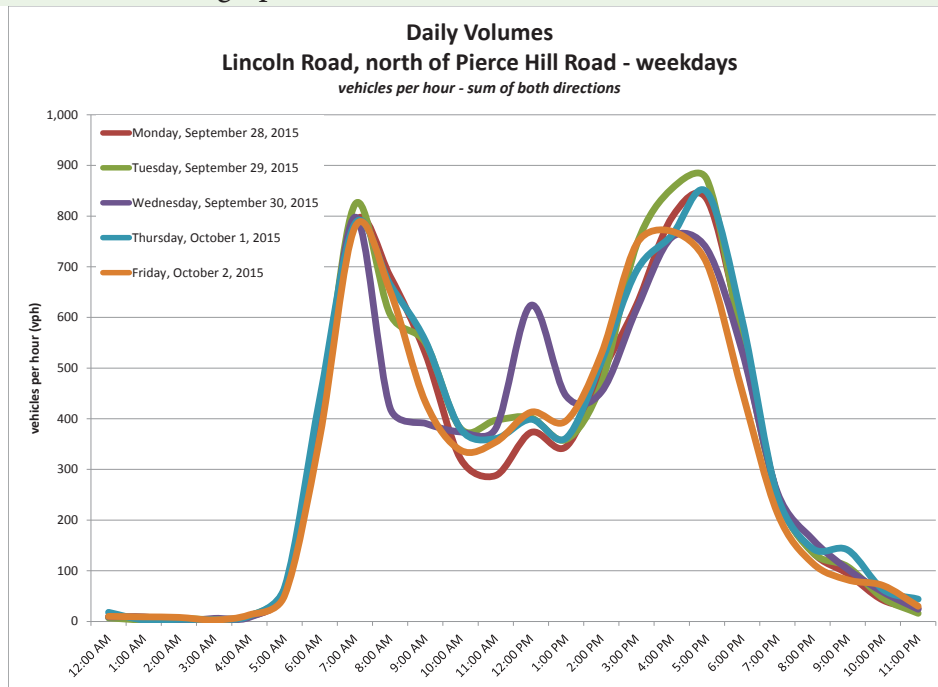


Consultant Team

- Conducted intersection counts
 - At Lincoln Road and Ballfield Road
 - On the campus
- Observed school day vehicle and pedestrian activities
- Observed waiting and delays exiting campus
- Used data to assess level of service of Lincoln Road / Ballfield Road intersection



Traffic - volume graphs

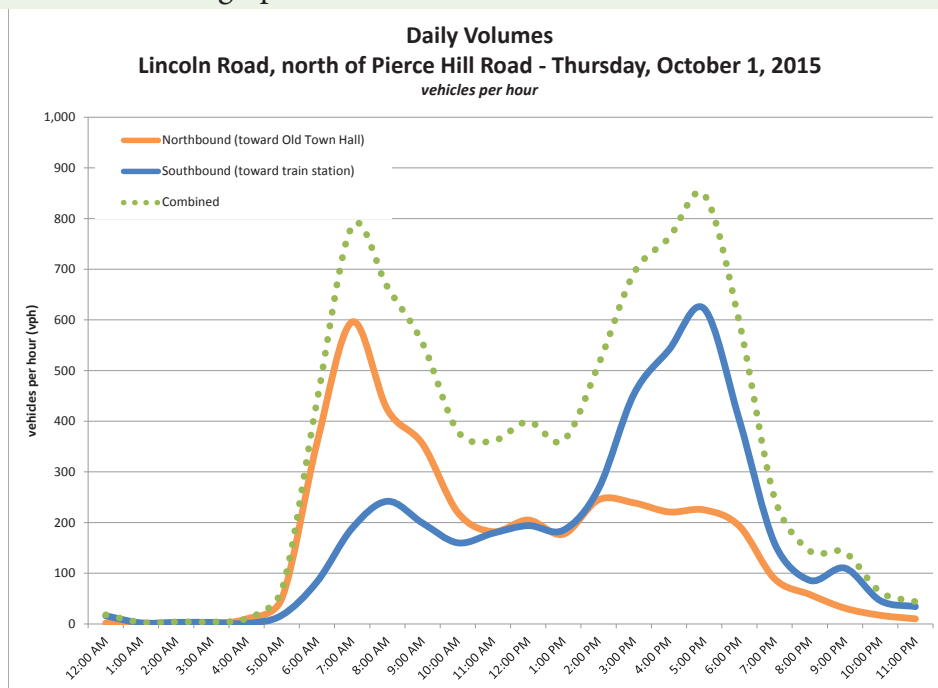


Source: Howard Stein Hudson
10/6/2015

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30 October 2015



Traffic - volume graphs

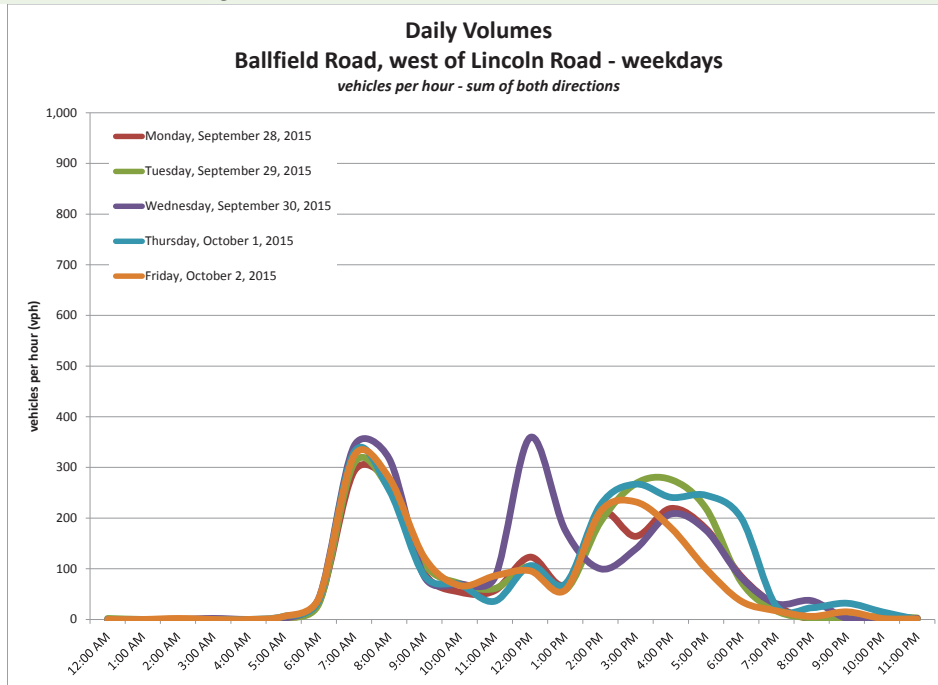


Source: Howard Stein Hudson
10/6/2015

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Traffic - volume graphs

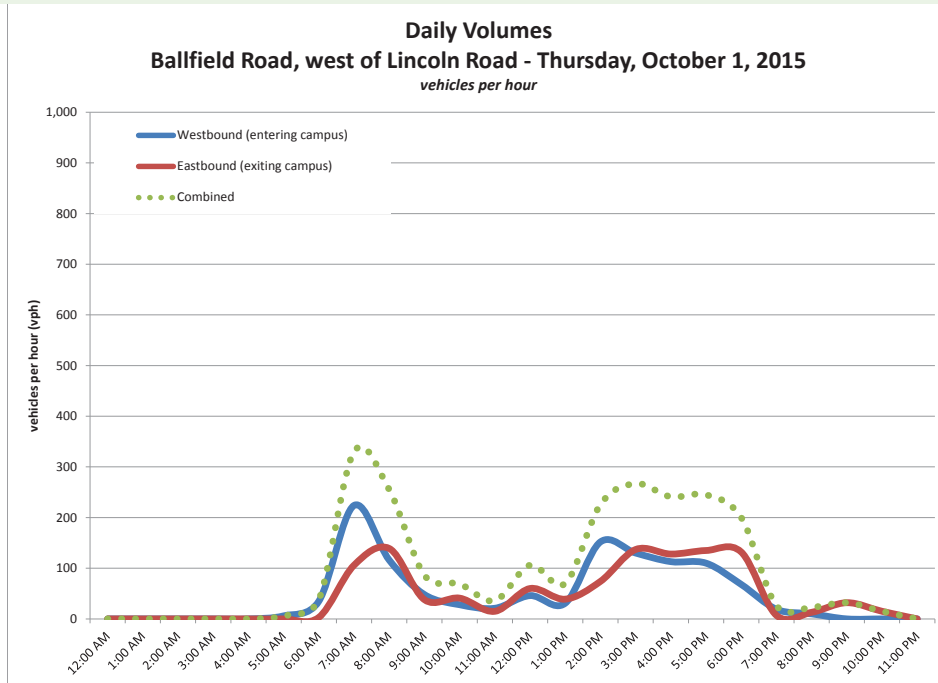


Source: Howard Stein Hudson
10/6/2015

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Traffic - volume graphs

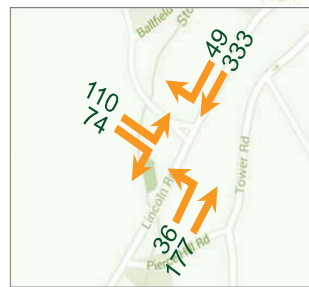


Source: Howard Stein Hudson
10/6/2015

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Traffic - intersection analysis



Observed dismissal peak hour volumes

Ballfield Road approach to Lincoln Road

Weekday Peak Hours	During peak 15 minutes		During other 45 minutes	
	avg. delay (sec/veh)	level of service	avg. delay (sec/veh)	level of service
a.m. peak (7:00 – 8:00 a.m.)	19.2 (7:45 – 8:00 a.m.)	C	7.3	B
dismissal peak (2:45 – 3:45 p.m.)	92.2 (2:55 – 3:10 p.m.)	F	7.3	B
p.m. peak (4:45 – 5:45 p.m.)	18.8 (5:15 – 5:30 p.m.)	C	18.8	C



HOWARD STEIN HUDSON

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Parking

“not enough”, “always full”, “not in the right location”, “pick up / drop off difficult”, “buses cause problems”, “confusing”



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Parking - interim thoughts:

Parking use

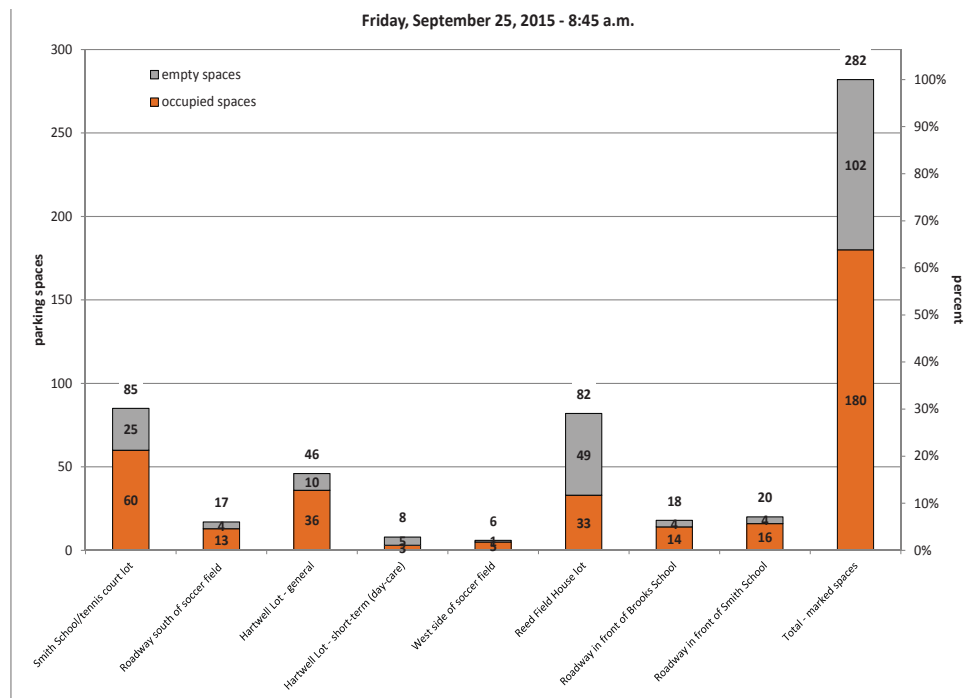
- Patterns are typical of a public campus
- Most school days see about 65% of the total capacity
- The most accessible lots are essentially full all day
- Use patterns don't follow designated spots or areas

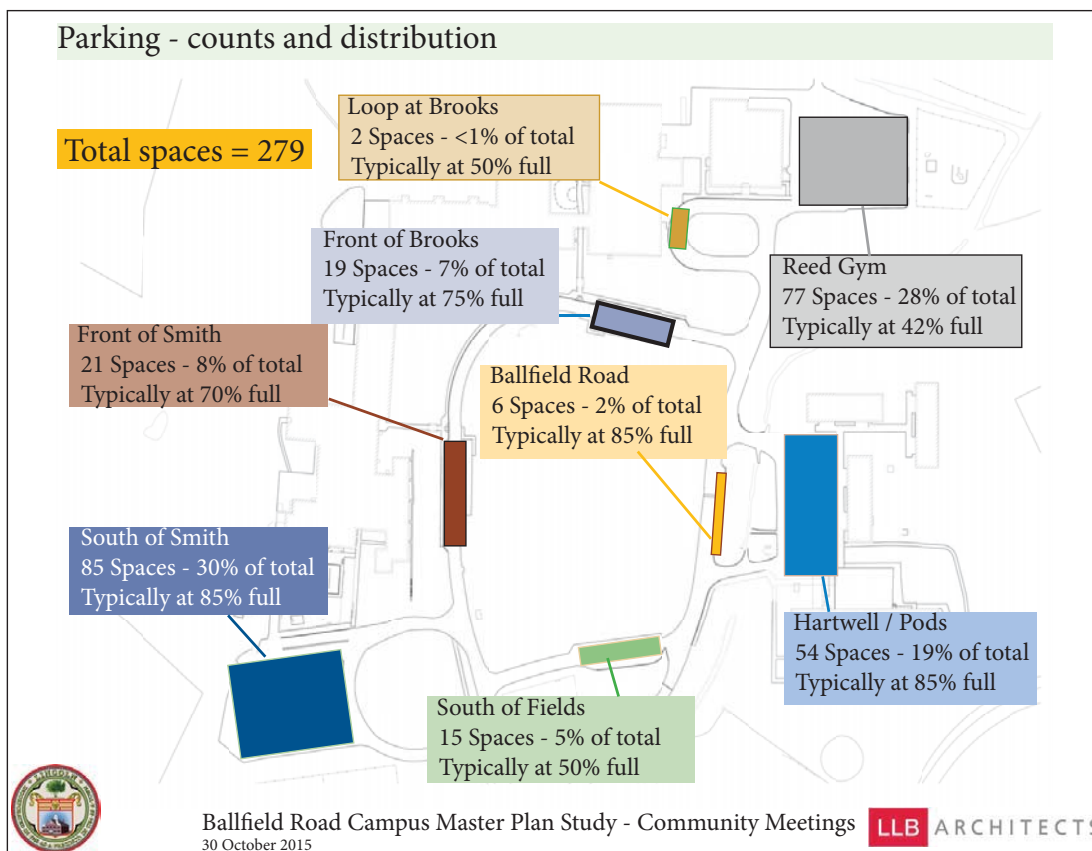
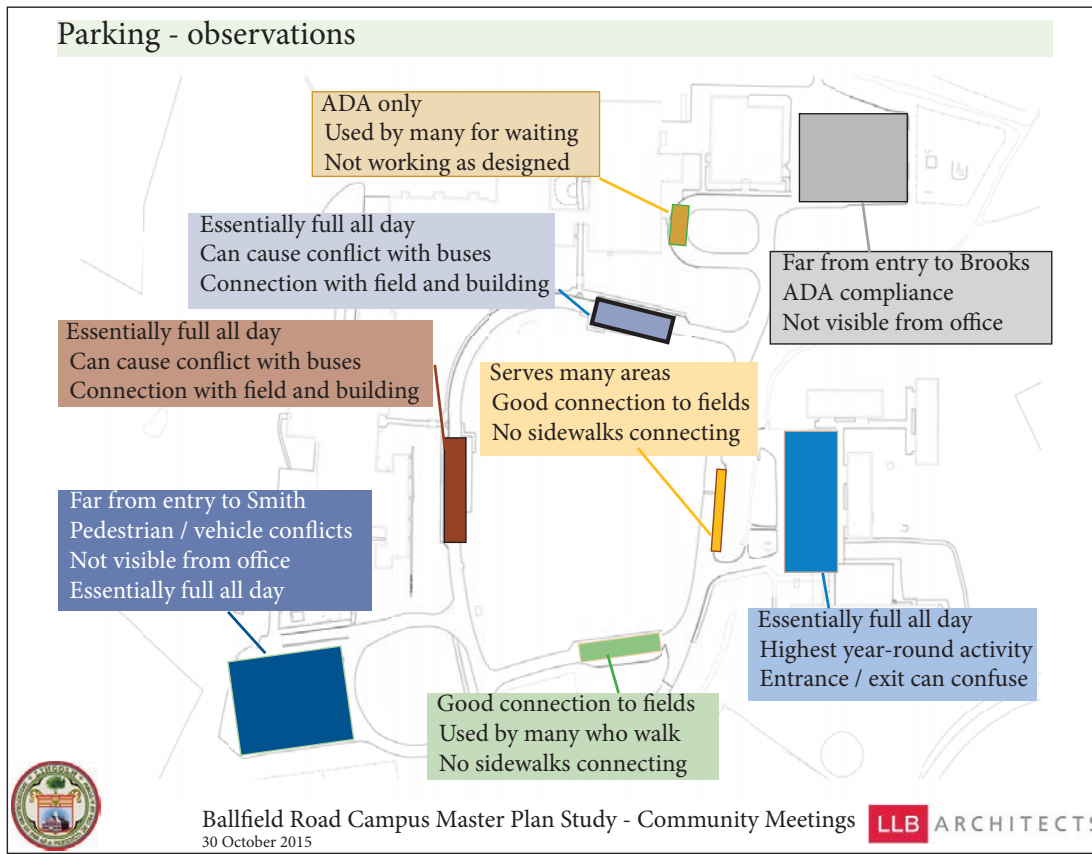
Considerations

- Distributed lots contribute to the character of the campus
- Not all of the lots are used equally on a typical school day
- Adjusting the capacity of some of the lots might elevate safety
- Connecting lots with pedestrian features might elevate safety
- Better visual connection between lots and offices might elevate safety



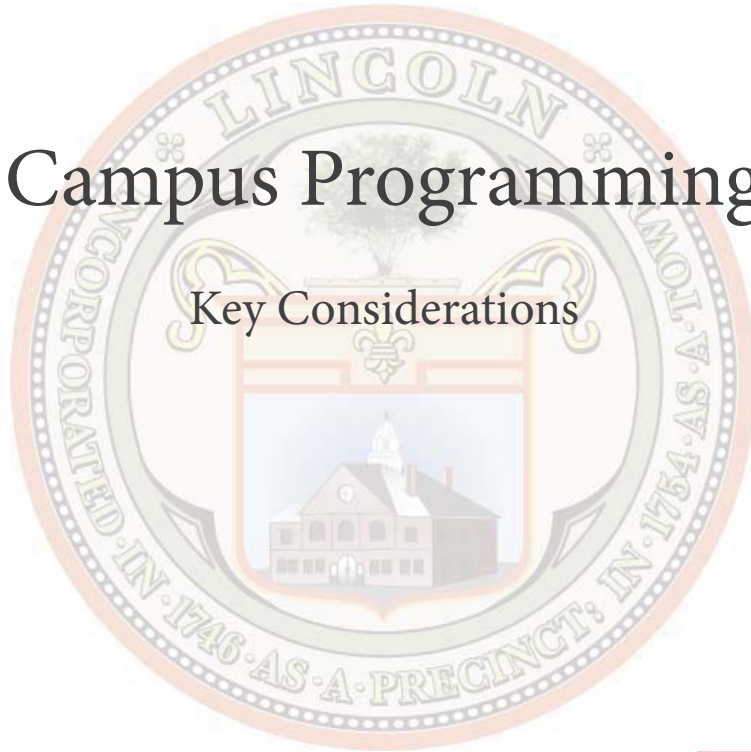
Parking - representative school-day use





Campus Programming

Key Considerations

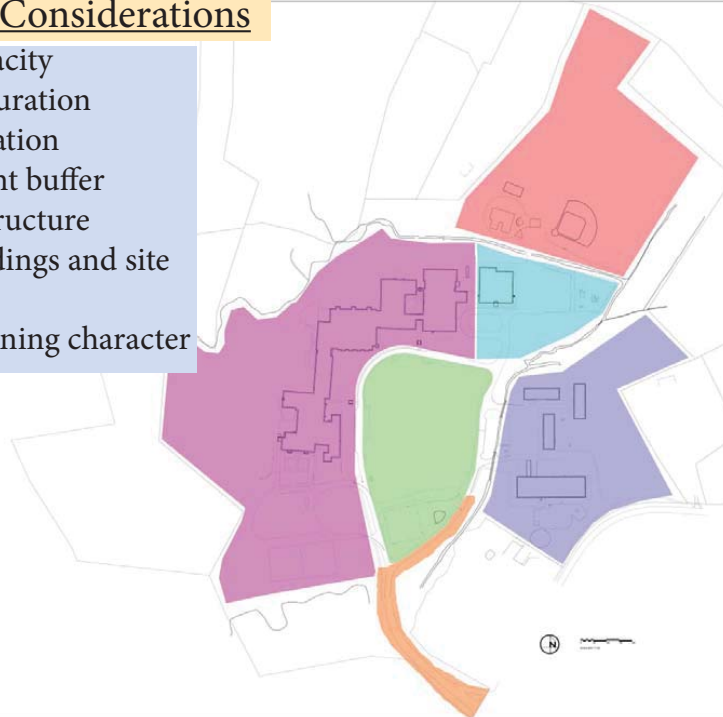


LLB ARCHITECTS

Campus planning considerations - overview

Campus Wide Considerations


- Septic system capacity
- Parking lot configuration
- Building configuration
- Wetland/Riverfront buffer
- Pedestrian infrastructure
- Condition of buildings and site improvements
- Defining and retaining character



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LLB ARCHITECTS


Campus planning considerations - east side zones



Codman Zone Considerations
Pool; Codman Field; mostly undeveloped; parking; no direct street access; gas line; some slopes; regulatory considerations

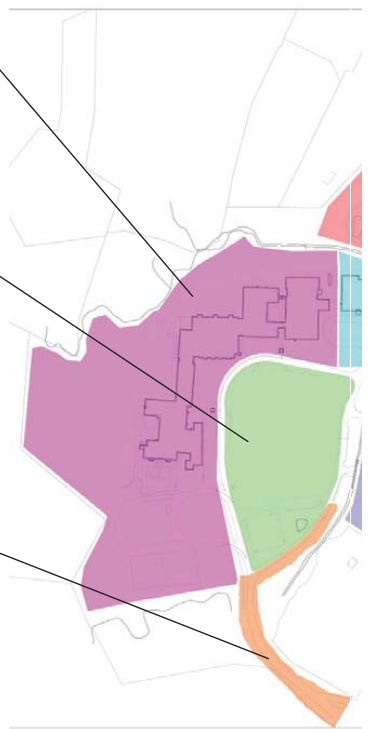
Field House Zone Considerations
Field House serviceability, condition; can walk to Hartwell Zone; possible swing space; least used parking during school day; regulatory considerations

Hartwell Zone Considerations
Viability of septic system; viability of Pods; Lincoln Road frontage; possible swing space; most heavily used parking area; some steep slopes; regulatory considerations



Ballfield Road Campus Master Plan Study - Community Meetings **LLB ARCHITECTS**
30 October 2015


Campus planning considerations - west side zones



School Zone Considerations
Character, condition, and functionality of the buildings; Smith parking; possible swing space

Center Field Zone Considerations
Central to campus character; athletic fields; septic field location; regulatory considerations; parking heavily used; frequent parking on grass; defined by the bus loop and buildings

Campus Entry Zone Considerations
Traffic flows within acceptable parameters; few accidents; good sight lines; intersection layout is acceptable; roadway is a little narrow; some delays during school dismissal; bus queueing along road; regulatory considerations



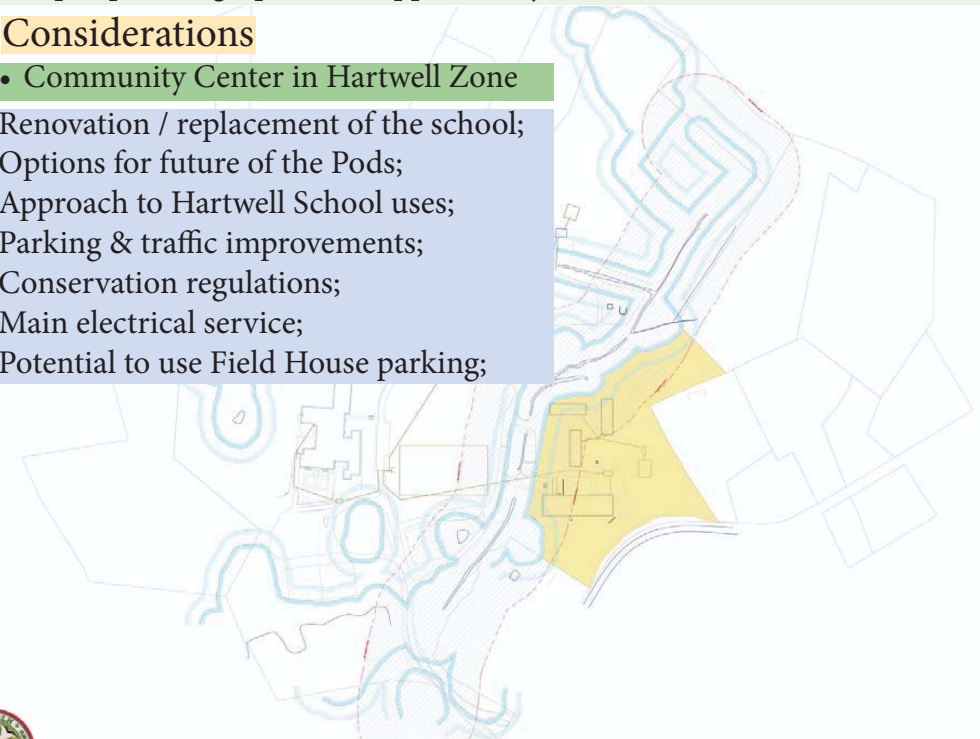
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30 October 2015


Campus planning - potential approach - yellow

Considerations

- Community Center in Hartwell Zone

Renovation / replacement of the school;
Options for future of the Pods;
Approach to Hartwell School uses;
Parking & traffic improvements;
Conservation regulations;
Main electrical service;
Potential to use Field House parking;



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30 October 2015

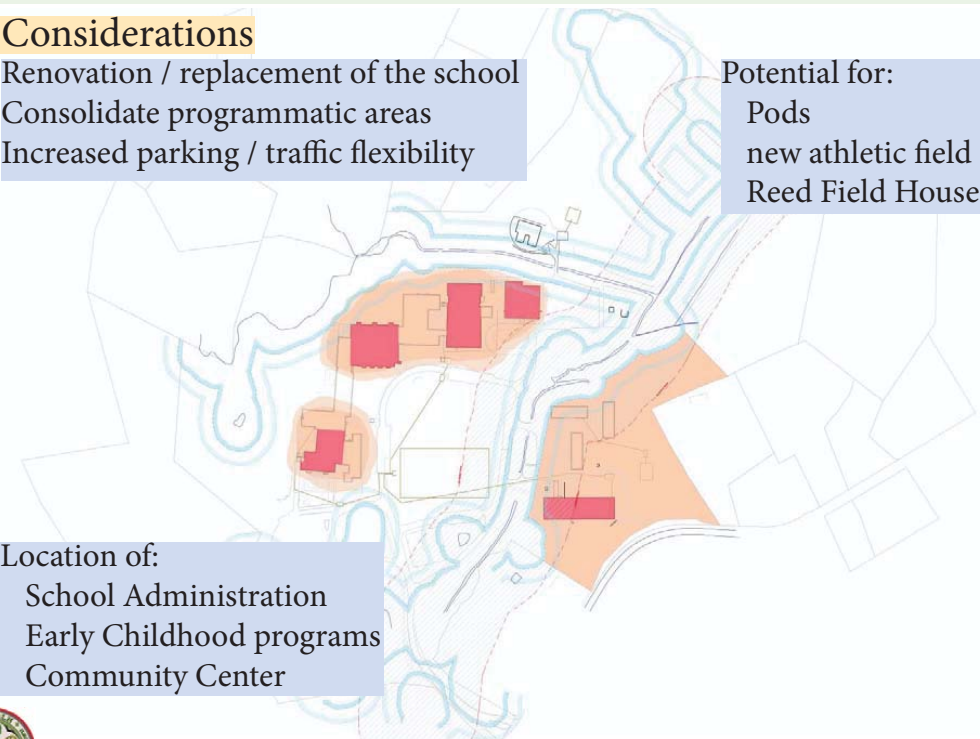
Campus planning - potential approach - orange


Considerations

Renovation / replacement of the school
Consolidate programmatic areas
Increased parking / traffic flexibility

Potential for:
Pods
new athletic field
Reed Field House

Location of:
School Administration
Early Childhood programs
Community Center



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30 October 2015

Campus planning - potential approach - purple

Considerations

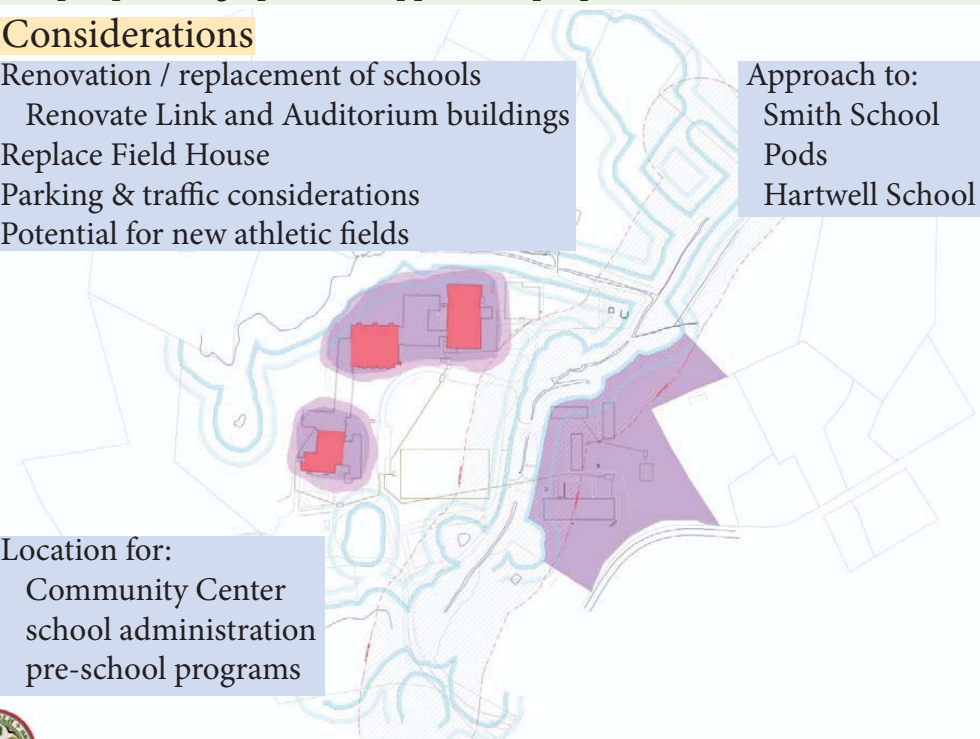
- Renovation / replacement of schools
 - Renovate Link and Auditorium buildings
- Replace Field House
- Parking & traffic considerations
- Potential for new athletic fields

Approach to:

- Smith School
- Pods
- Hartwell School

Location for:

- Community Center
- school administration
- pre-school programs



Ballfield Road Campus Master Plan Study - Community Meetings 30 October 2015 **LLB ARCHITECTS**

Campus planning - questions to consider

- If I could change 3 things on the campus I would...
- My favorite aspect of the campus is...
- In the future the campus will...
- The campus would be better if...
- I feel the campus is most importantly a...
- What hasn't been asked?



Ballfield Road Campus Master Plan Study - Community Meetings 30 October 2015 **LLB ARCHITECTS**

Moving forward - CMPC Public Forums:

Saturday, November 14, 2015 beginning at 9:00 A.M.
Lincoln State of the Town Meeting
Brooks (Donaldson) Auditorium

Thursday, December 10, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room
Public Presentation of CMPC Draft Final Report



LLB ARCHITECTS

Moving forward - CMPC Meetings:

Monday, November 9, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room

Friday, November 20, 2015 beginning at 8:15 A.M.
Hartwell Multipurpose Room

Monday, November 30, 2015 beginning 7:00pm
Hartwell Multipurpose Room



LLB ARCHITECTS

Moving forward - Online / Web resources:

Campus Master Planning Committee
page on town website : www.lincolntown.org.

School Building Advisory Committee (SBAC)
Final Report & Info: www.lincnet.org

Community Center Study Committee (CCSC)
Final Report & Info: www.lincolntown.org



LLB ARCHITECTS

Ballfield Road Campus Master Planning Committee

Community Meetings
Parent Teacher Organization
Council on Aging
30 October 2015

Thank you!

LLB ARCHITECTS

Moving forward - CMPC Meetings:

Monday, October 26, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room

Monday, November 9, 2015 beginning 7:00 P.M.
Hartwell Multipurpose Room

Friday, November 20, 2015 beginning at 8:15 A.M.
Hartwell Multipurpose Room

Monday, November 30, 2015 beginning 7:00pm
Hartwell Multipurpose Room



LLB ARCHITECTS

Moving forward - Online / Web resources:

Campus Master Planning Committee
page on town website : www.lincolntown.org.

School Building Advisory Committee (SBAC)
Final Report & Info: www.lincnet.org

Community Center Study Committee (CCSC)
Final Report & Info: www.lincolntown.org



LLB ARCHITECTS

The seal of Lincoln University is a circular emblem. It features a central shield with a building illustration. The shield is surrounded by a decorative border containing the text "LINCOLN UNIVERSITY" at the top and "INCORPORATED IN 1786 AS A PRECINCT IN 1784 AS A UNIVERSITY IN 1862" around the bottom. The seal is rendered in a light, semi-transparent style.

Ballfield Road Campus Master Planning Committee

Public Forum
15 October 2015

Thank you!

October 30th PTO and COA Forums

Responses to the question boards - PTO



Primary
Literacy
Center
SE24
Bloomberg
Markets
& Huber
Stewart

I feel the campus is most importantly a ...

18 respondents total (PTO Forum 30 October, 2015)

School related - 13 comments

Place where a wide variety of age groups gathers

Safe school campus for kids of all ages (preschool - 8th) in Lincoln

School

Area to serve hundreds of kids & they feel safe

Place to educate kids

Public school where safety, education, and functionality is important;

A place to support learning in many different ways.

K - 8 School

Welcoming space & draw for all ages in community - year-round

Place to spend all day: school then sports then community center activity;

Place of education

School - a central part of community.

A place for learning. Creating a great environment for children and also extending this to the older community.

These comments centered on the ideas of learning within and as part of a community.

Campus related - 11 comments

The heart of Lincoln.

Safe place for kids to be

Non commercial focal point of the town;

Visually appealing, lots of trees still (as we have)

Community gathering spot

Place for the community to gather

Community feel multigenerational to benefit all within the community. Expand our recreational programs as well as educational

Public space

Centralized hub of activity for the Town of Lincoln - all seasons of the year - school (Sept - June) and summer with Codman Pool & 4th of July events, location of town soccer, etc.

Community that can be utilized by the whole town of Lincoln - - students, parents, family, seniors - - promoting education, health, fitness, and environmental awareness and appreciation.

Community gathering space that highlights what the Lincoln community holds near and dear: open space, children, families, seniors, gathering, quiet/peace, earth-friendly/green/innovative space

These comments trend in a vein similar to those pertaining to the school, but see the campus as part of a larger community.

If I could change 3 things on Campus I would...

20 respondents total (PTO forum, Oct. 30, 2015)

Educational Facility related - 31 comments

Connect the gym to the building;
Re-build / renovate school buildings
I would build new schools. We were shocked to move here and have the new school plan rejected.
Modernize buildings
First change that I believe is most important is a proper Middle School cafeteria and a connector from the Brooks school to the cafeteria/gym. Café like feel/separate gym.
Proper school cafeteria
Connect the gym
More studio space for art, music
I would put the cafeteria in Smith - tired of my kids eating in a gym.
Comfortable classrooms - configure in a current/modern way
Cafeteria/kitchen that could be used for teaching & preparing our school garden produce
Cafeteria where kids could have time for a healthy lunch.
Connect the gym to the building
Fresh water
Green building - LEEDS?
Physically link Brooks Gym / cafeteria to school
Dedicated cafeteria space
Add kitchen (for cooking);
Build a school cafeteria;
Build a gym with a basketball court (indoor) open to community.
Dedicated cafeteria;
I admire dramatic atriums in school buildings that serve as a hub for the school, with attractive open air and natural light. I would love to see an atrium between Smith & Brooks.
I think the current layout of the campus works pretty well ... buildings need to be renovated and fields need some attention but I think our best step forward would be to build on the good structure we already have in place. The campus needs a face-lift not a total make over.
Eliminate old-fashioned narrow hallways; make it more intergenerational & shared space for lots of purposes (council on aging, parks & rec, etc.);
Living, green roofs - WOW! (with a smiley face drawn)
Better signage;
Preserve outdoor learning opportunities
<u>More</u> outdoor learning spaces & <u>easy</u> access to these spaces;
Preserve interface w/ Lincoln Conservation Land;
It would be great to see more park like benches + walkways leading up to school buildings and near playgrounds. The school buzzes with activity after school and on weekends. This would also be great as an outdoor classroom or community group meetings.
Redesign K-4 pick-up from Walker's Area (ie: standing behind building in rain until doors unlocked)

Responses trend to a desire for better cafeteria and kitchen facilities most strongly. Following closely are better indoor learning environments and physical education facilities.

If I could change 3 things on Campus I would...

20 respondents total (PTO forum, Oct. 30, 2015)

Parking, Traffic, Pedestrian related - 20 comments

Sidewalks (additional)

Address accessibility

Better walking paths across campus (ie sidewalks around loop)

Sidewalks make sense and provide more safety for pedestrians.

Make sure all buildings are accessible easily by sidewalks so there are no concerns about kids walking/biking to school right now you cannot get from Hartwell to Smith by sidewalk.

Make better drop off logistics at Smith School. Fix the conflict between case mini-bus drop-off and parents dropping K-4 pick-up in the gym. I hate walking by the smelly dumpster, and the whole process is inefficient.

The traffic exiting the school and trying to get back on to Lincoln

All one-way traffic?

Change road structure

Change the traffic for safety of peds

Are lanes wide enough to accommodate bus drop off & pick up?

Traffic flow

Parking spaces for Brooks & Smith visitors (the spaces in front of the offices) are too narrow!

Parking - esp. at Hartwell

Separate community parking from school parking;

Change parking & pedestrian way

Create better parking

More parking near Hartwell

Improve parking / better flow for drop off/pick up

Responses trend virtually evenly between the related areas of better parking, vehicle circulation, and pedestrian circulation.

Athletics and field related - 6 comments

Remove tennis court at main entrance to open space

Update pool & make larger

I would redo the athletic fields.

More fields

Minor: better playing fields

Increase playing field availability;

The trend in these comments is for more athletic fields primarily.

If I could change 3 things on Campus I would...

20 respondents total (PTO forum, Oct. 30, 2015)

Campus related - 8 comments

Has multi-level parking ever been considered? This could also help out as a covered space in the event of fire drills. It would not need to be a very high structure, but roof parking could be a great solution to maintaining open space and

Tear down Hartwell - replace Pods.

Demolish pods, put rec dept + seniors there, don't keep Smith building

Community Center addition for educational and recreational expansion.

Have a community center

Redo pods

Better room for park & rec (ie: better room for fitness classes)

Fitness Space for community;

These responses show a variety of areas of interest to the PTO members who participated, with a majority of the responses addressing a desire for better community focused facilities.

In the future the campus will...

19 respondents total (PTO Forum 30 October, 2015)

35 - comments

continue to serve a wide variety of age groups
will be a community hub for all ages
function as a community gathering place, I hope.
have a community center and better cafeteria For the middle school.
Show that Lincoln is moving into the <u>21st</u> century where the town supports our children & the campus acts more as a community center and not just for schools.
Be a center of the Community - old and young.
Serve not only the School community but more of the entire Lincoln community; Serve Lincoln more during non-school hours for also non-school activities
Focus on the children in the community - ie the schools
flow better
improve safety for our kids
maintain it's green space
Better support the aspects of community that are already present and thriving
have more aspects that foster wellness (dining, cooking, sports, garden)
(have) spaces to better support kids w/ special academic needs (both lower & higher ends); 4)
hopefully (be) a greener school
Have added athletic features to increase outdoor community involvement: more fields, tennis/lacrosse backboard, batting cage
Allow technological advances to be fully incorporated
Be two stories high
have a cafeteria
LEAD certified
Keep tennis courts
have another soccer field
keep the trees, grass areas
prioritize the educational experiences of the students
serve as a community gathering space
Maximize recreational opportunities for all ages
not be old and decrepit. Buildings need to be upgraded (read: replaced)
bring in multigenerational community members.
hopefully be improved
serve the community young and old ... be a hub for multi generations and be a source of pride for the town. Why on Earth do much larger income communities such as Medford and Stow have better facilities than Lincolnites enjoy? Lets not wait any longer and get this done! During the school year, during the summer, during our long winters ... we need a space that works well for all.
could bring generations together for example could community center be co-located with the preschool program?
have an additional road for better traffic flow
have a modern high tech building housing grades K - 8
have a modern space housing parks & rec and COA
a learning garden for children to cultivate

Primary conclusion - there is a strong desire for the provision of modern school buildings and learning environments

The campus would be better if ...

18 respondents total (PTO Forum 30 October, 2015)

School facilities related - 13 comments

The gym was connected to the building

New cafeteria

The buildings were updated, modernized and structurally functional for students to learn and grow.

It served the needs of the students and teachers better

We could secure the school

It seems disjointed. Having an atrium as a hub would go a long way in unifying Smith & Brooks.

The school will be updated/remodeled to ensure safe, academically (illegible comment), visually pleasing, modern facility with air conditioned space, cafeteria, & proper class space.

2 story building;

Buildings were built with 2 floors to maximize green space, athletic fields and also allow for more useable school / community space.

Multi-story buildings to keep more open field footprint

BUILD UP FOR THE SCHOOLS 2nd & 3rd floors would be great.

It had a green/solar panel/LEED aspect

*Would it be possible to build a solar canopy over the parking areas or perhaps just the largest parking area?; * especially the parking lot near the Codman Pool where people are looking to park in the shade during the summer months.

Trends seen in these comments include a desire for a multi-story school and a school that has better connections and learning areas.

Site related - 8 comments

Through the use of benches, gardens, sitting areas and pedestrian walkways ... it would be great if the space was more inviting.

Had more outdoor learning spaces

It was more walkable (better sidewalks)

Encourage walking (ie: pedestrian walkways)

Incorporate appropriate walkways between buildings

Traffic were taken care of to make it safer for kids to walk/bike

People would park in spots

Create better accessible parking;

The predominant trend is for a safer and more pedestrian centered campus.

The campus would be better if ...

18 respondents total (PTO Forum 30 October, 2015)

Campus related - 7 comments

More fields

Better green space / ballfield lighting;

A need for more athletic fields

We had a community center

We had more inter-generational opportunities;

If the entire town used it there wouldn't be a generational divide in town.

The town embraced change, put the kids first, became more flexible.

Trends toward a desire for more inter-generational and wider community use.

My favorite aspect of the campus is...

21 respondents total (PTO Forum 30 October, 2015)

34 - comments total

- amount of green space and trees
- that kids of all ages are together (preschool - 8th)
- multiple functions in one place (school, parks & rec, pool, etc.)
- center green - glad to hear that remains a focal point
- trees & rural feel
- low lying buildings
- is the entrance way to the school, it gives a unique feeling to the campus
- center field, green playground
- It looks and feels like an independent school campus. It is beautiful.
- center green, layout of school, road/drive into campus
- The access to grass for the kids during recess. With that said the fields are in terrible shape - other sports teams comment repeatedly on how awful they are
- greenery, bucolic nature
- intimate setting
- modern architecture
- sunlight - too much in some places
- this room (the story room) off the Library, with its stepped seating ... super cozy & communal.
- The abundance of Green spaces (grass & trees)
- I love the fact that it is such a community center - school for K-8, center of town sports, pool, community gathering (town meeting), rec dept. activities, etc.
- Long, continous campus, U-shaped around campus green (build up)
- Codman fields, Codman pool, Library space, Link area, center field, main driveway
- that it serves as a community gathering space.
- the green space in the center of campus
- layout
- separated from town, inclusive
- green spaces
- the heart of the Lincoln School campus is the center playing field with the various buildings scattered about. Even if it had to be reduced in size, it would be great to keep the horse shoe shape as it seems like a hug for the members of the community to enjoy.
- the rural character - very important to maintain this
- that there are multiple points of entry into the school building and points of drop off eg. Donaldson Auditorium,
- The united community feeling. I feel apart of a village that promotes education activities, relationship building and school spirit
- green space
- smaller, separate parking lots (hidden away from center)
- wooded entry / park like entry
- lots of doors leading directly outside to make it easy to access nature.
- how it all connects - schools, fields, rec, school admin

Primary conclusions - maintaining the connection to the green and the community aspects.

What hasn't been asked?

6 Respondents total (PTO Forum 30 October 2015)

General - 6 comments

What do you like about the current buildings? 1) PLEASE PLEASE be sure new buildings have 2 doors in all classrooms as is the case in many today - this is security - an escape route. It's the reality of the world we live in. PLEASE!

more discussion of building schools up; still concerned that the overall Town doesn't support new schools - push is for senior center not for redoing schools.

Septic under Paddock Field - - does that limit a field renovation?

How would we prioritize our objectives if we can't do everything?

Whatever happened to the wetland project? Specifically the wetland boardwalk?

excellent meeting and I was well informed.

Some concern that the project address specific questions or concerns moving forward.

October 15th Public Forum

Responses to question boards - COA



I feel the campus is most importantly a ...

4 responses total (COA forum 30 October 2015)

4 - comments total

Center of town activity; schools, Town meeting , 4th July, sports, voting, etc

A center of town

Center for active (children & adults) citizens as opposed to library, public safety/DPW, town hall

School & exterior recreation location; it is not the center of Lincoln to me - I see people at Donelan's and the Library. Right now I value it as an off road location for exercise (walking, taking grandchildren to play there) and attending town meetings. I don't currently use the services of the COA or Recreation programs.

Primary conclusion - For most the campus is regarded as the center of the Town.

If I could change 3 things on Campus I would...

8 respondents total (COA Forum 30 October 2015)

8 - responses

I am a member of the minority that opposes placement of the Community Center on the campus as planned. I also believe placement in the Hartwell area is unwise. It is the most congested area. Even with the planned separate entrances on separate levels - traffic will be complicated & parking inadequate. Seniors will have to walk long distances - from Reed parking lot. This will diminish or discourage utilization. I don't think we should close minds to aquisition/utilization of conservation land near Smith - that might be a suitable site.

Add community Center /COA to campus.

take down that awful tower; .

close handicap pkg for TM, Voting, etc

increase parking at Smith School. At pick up time cars are in the snow or mud, way off the official parking areas.

Might you ask the staff to park at the Reed gym lot - either on a voluntary basis or on a 3x's a week to allow for times

Can the exit from Ballfield RD onto Lincoln RD be divided into 2 lanes? (2 lanes in and 2 out indicated in sketch on the paper) One might need mirrors to help cars see on either side of the road.

connect Reed Field house to Brooks building

move school entrances toward parking lots and away from Ballfield RD

Primary conclusion - parking, access.

In the future the campus will...

11 Respondents total (COA forum 30 October, 2015)

11 -comments total

be a safe, welcoming area for all generations.

Parking will be a concern.

Please include trees and other vegetation to minimize reflected heat from blacktops.

Perhaps water permeable parking surfaces can be used.

hide parking but have it convenient

be center of activities

if climate change brings more water the campus will be drowned

the location should never have been built on - swampy (Why Sumner gave it?)

Include a Community Center near the Pods area.

Separate entrance and parking for cars.

Be a community gathering place for residents of all ages.

Primary conclusion - Environmental aspects, safety.

My favorite aspect of the campus is...

5 respondents total (COA Forum 30 October, 2015)

5 - comments total

it's spaciousness & rural

center & surrounding trees

Open center - grass & trees; Buildings around the center

The playing field in the center with the trees around it.

weather vane on library tower

Primary conclusion - the connection to the green and the natural feel.

The campus would be better if ...

3 respondents total (COA Forum 30 October 2015)

3 - comments total

Enhanced pedestrian access from trails (from Sandy Pond Rd and gas pipeline) and pedestrian access internal to campus, including a continuous circular path

cars were not all over & so visible

the ugly tower were gone

Some serious considerations be given (to) establishing alternate energy - solar panels, geo thermal

Primary conclusion - Aesthetics and visibility.

What hasn't been asked?

6 Respondents total (COA forum 30 October 2015)

6 - comments total

What has been asked (as I have learned privately) but the answer for which have not yet been made public is the ownership status of all the lots adjacent to the campus. Of great importance is specific knowledge of what lots are under conservation restriction. [Quietly, "rights of first refusal" might be explored, with an eye to the future.] But, today, what lots might be useful for the Town to own in the context of the current exercise.

Are we going to focus on "Green" aspects of our planning and construction?

w/o making it inconvenient, separate teacher/school pkg.?

correct water distribution system to eliminate use of bottled water

retain area at entrance of Ballfield Rd to hold & lead sandwich boards

more preschools near K to share facilities (playgrounds & interior spaces)

Primary conclusion - a wide range of items of interest to participants



IMAGES OF THE BALLFIELD ROAD CAMPUS

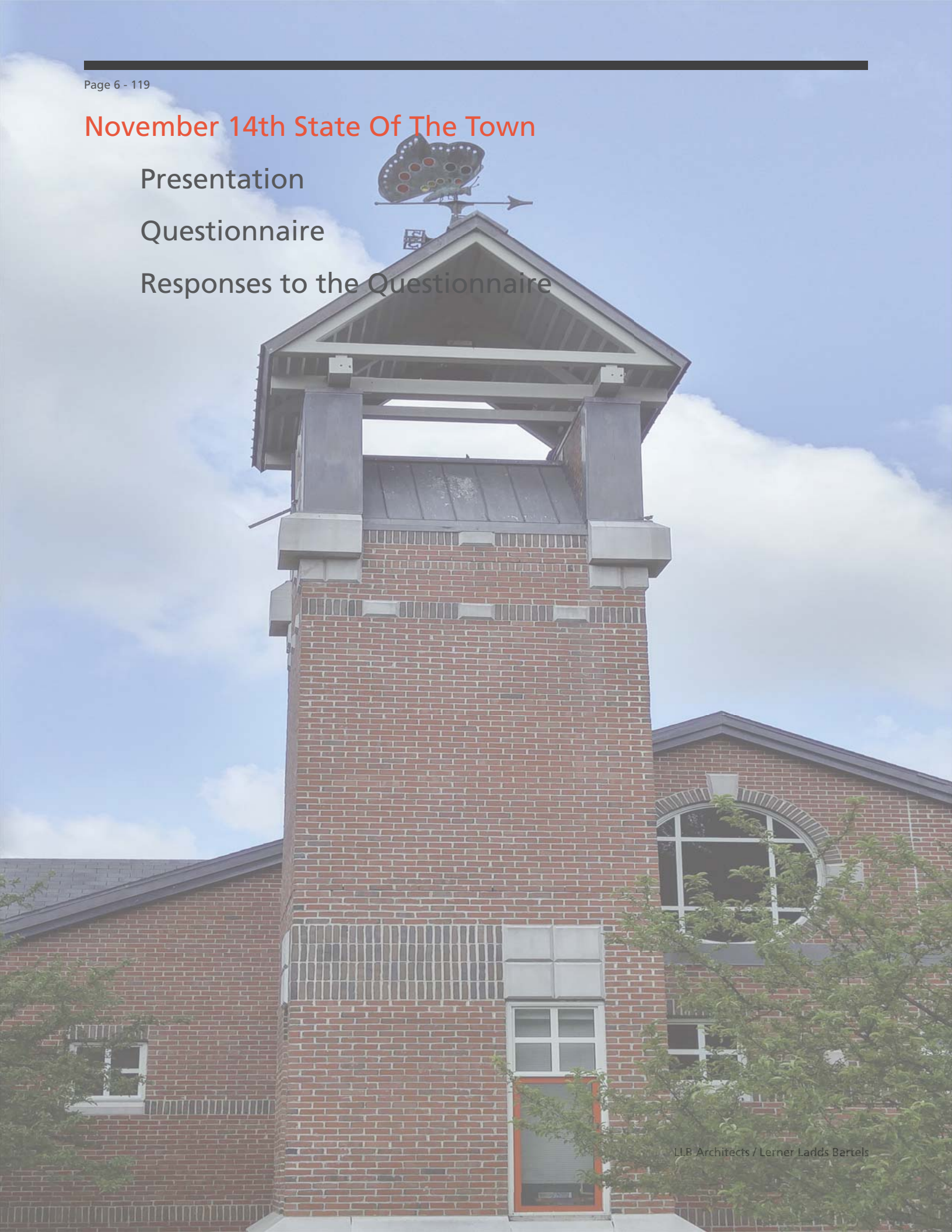


November 14th State Of The Town

Presentation

Questionnaire

Responses to the Questionnaire





Ballfield Road Campus Master Planning Committee State of the Town

14 November 2015

Campus Master Planning Committee

Voting Members:

Ken Bassett
 Vincent Cannistraro, Vice Chair
 Tim Christenfeld
 Paula Cobb
 Patty Donahue
 Renel Fredriksen
 Carole Kasper, Chair
 Peter von Mertens / Jim Meadors
 Dilla Tingley / Jack French
 Bryce Wolf

Roadway & Traffic Committee
 At Large Member
 School Committee
 At Large Member
 Parks & Recreation Committee
 Board of Selectmen
 At Large Member
 Conservation Committee
 Council on Aging
 Planning Board

Non-voting Members:

Carolyn Bottum
 Buckner Creel
 Tim Higgins
 Becky McFall
 Dan Pereira

Council on Aging Director
 School Business and Finance Administrator
 Town Administrator
 School Superintendent
 Parks & Recreation Director

Professional Consultant Lead:

Greg Smolley
 LLB Architects



Campus Master Planning Committee Charge

...to inform the planning for the contemplated school building and community center projects.

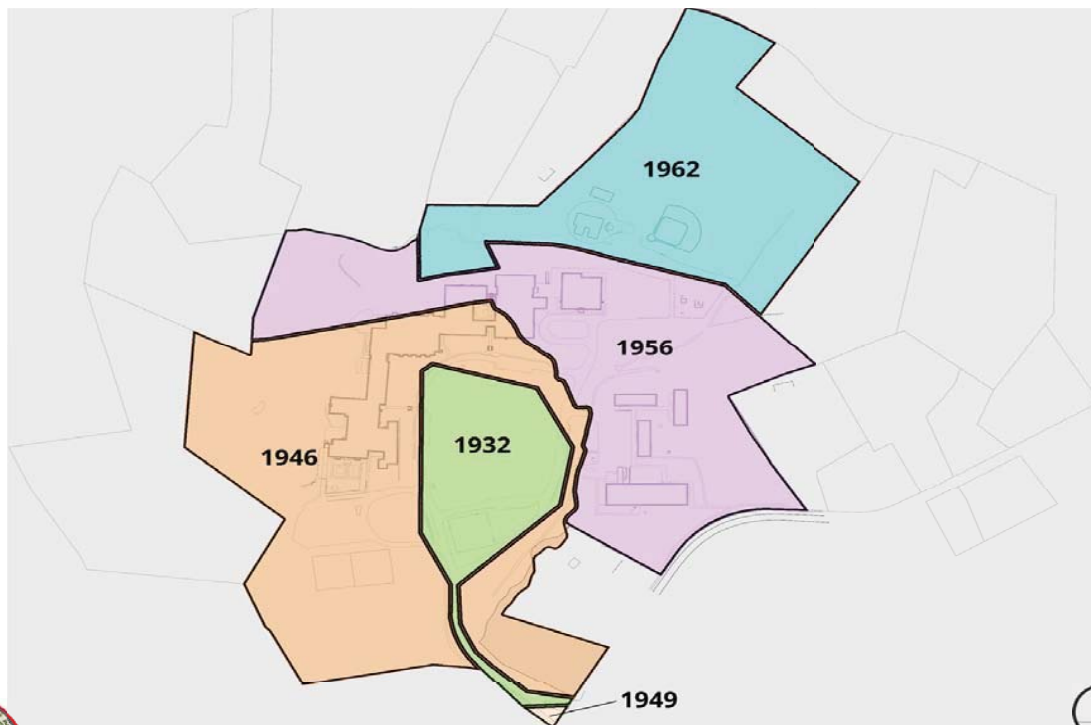
...produce a final report that confirms the existing uses and needs for space on the campus, anticipates potential future uses, assesses the capacity of existing infrastructure to support existing and projected uses...



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS

Campus Evolution - Land



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS

Campus Evolution - Buildings & Improvements



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Things we have heard . . .



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Master Plan - Interim Conclusions:

- A Community Center can fit on the campus

Traffic - Ballfield Road acceptable for increased uses;
A second entrance is not needed or advisable

Parking - Now adequate at most times;
Additional capacity will be needed

Buildings - Have functional & physical limitations

Athletic Fields - Limited fields space leads to schedule conflicts;
More fields would mean fields can be rested

Regulatory - Considerable wetlands buffer and Riverfront set
back areas; but not disabling

Septic - Existing systems may handle increased uses



Master Plan - Interim Conclusions:

- A Community Center can fit on the campus

Traffic - Ballfield Road acceptable for increased uses;
A second entrance is not needed or advisable

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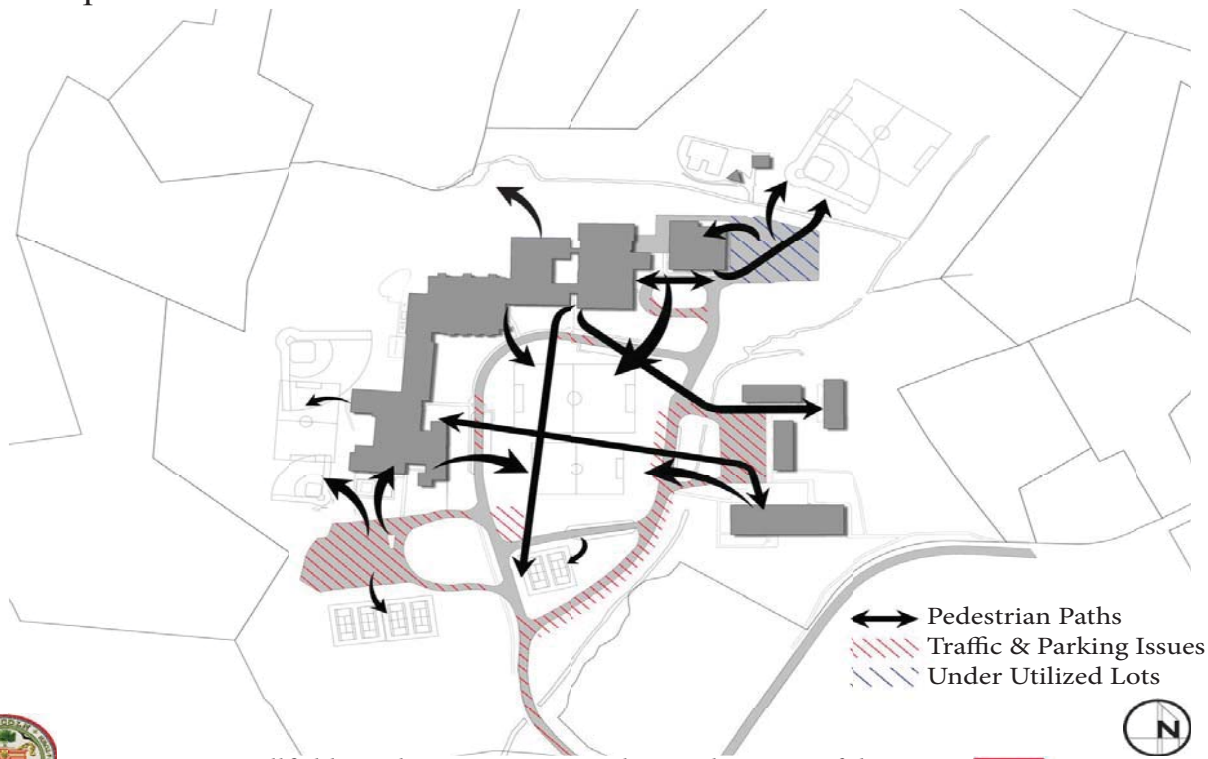
Regulatory - Considerable wetlands buffer and Riverfront set
back areas; but not disabling

Septic - Existing systems may handle increased uses

- A variety of potential opportunities



Campus Overview - On-site Observations



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

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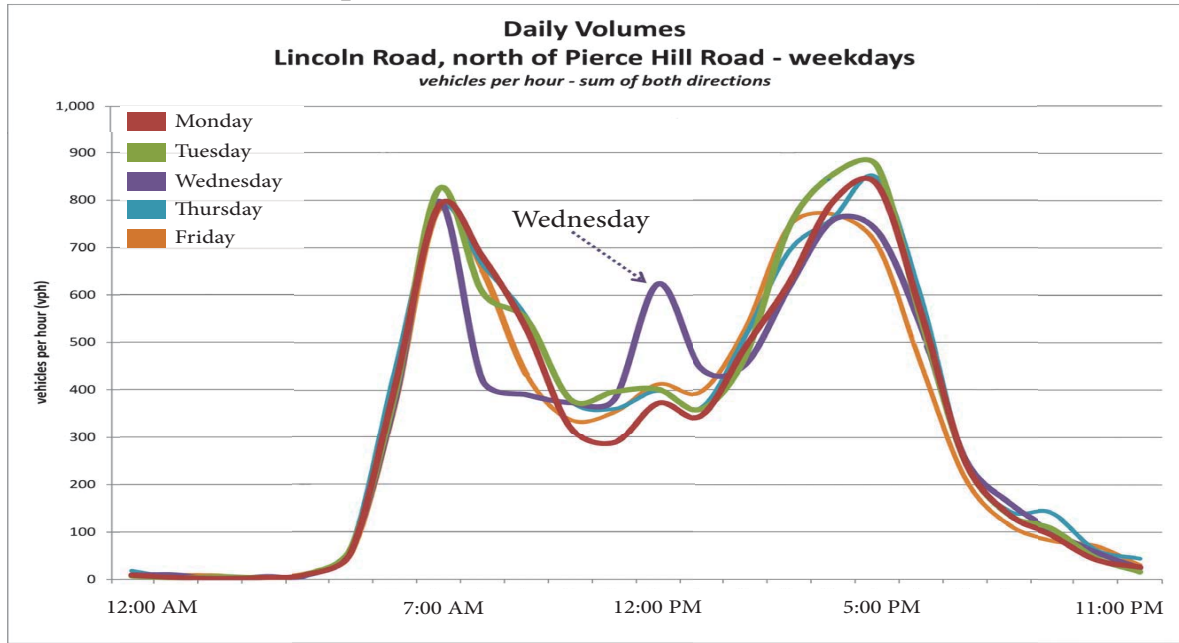
Traffic



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS

Traffic - Volume Graphs



Week of September 28, 2015 - October 2, 2015

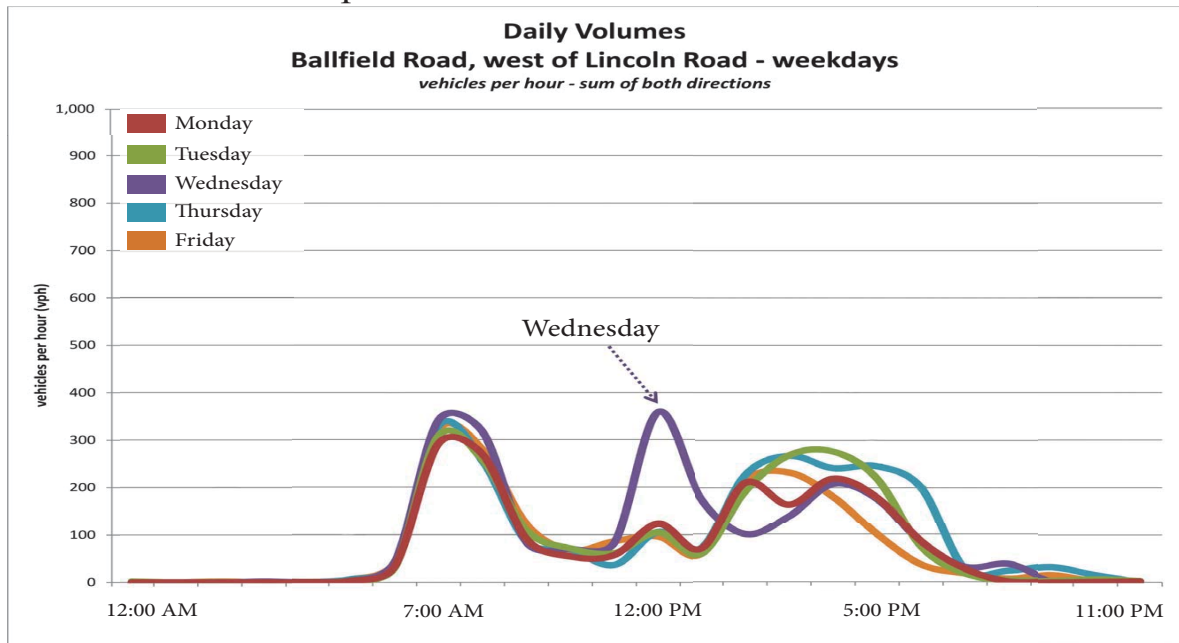
Source: Howard Stein Hudson
9/29/2015



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Traffic - Volume Graphs



Week of September 28, 2015 - October 2, 2015

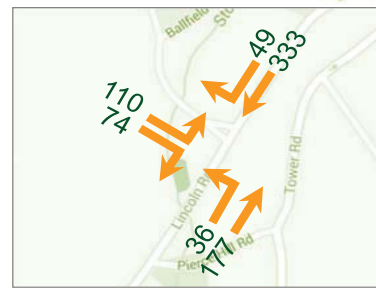
Source: Howard Stein Hudson
9/29/2015



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Traffic - Intersection Analysis



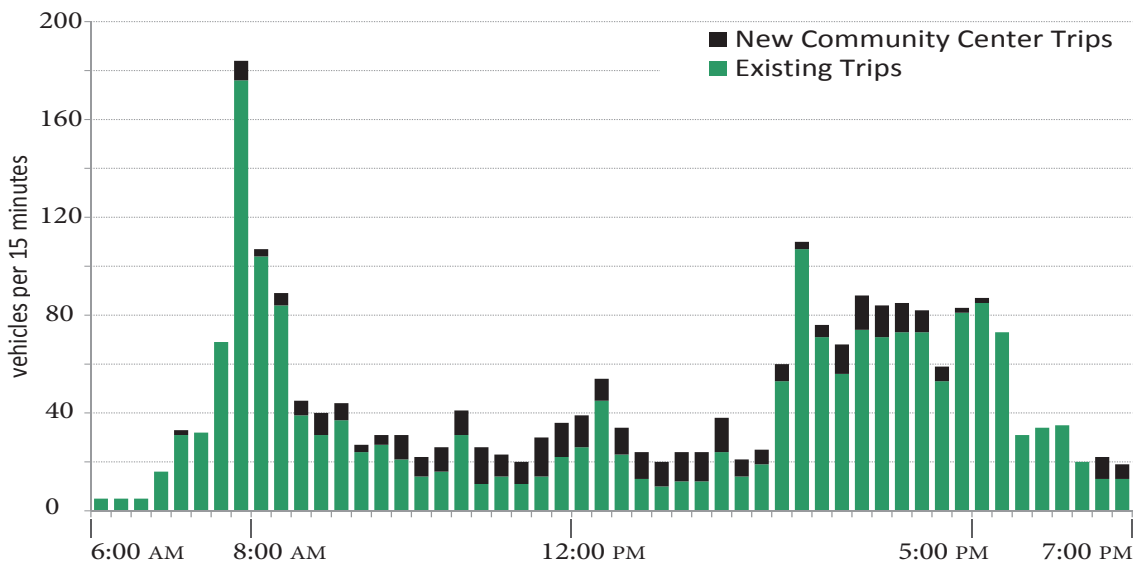
Example: Dismissal peak hour volumes

Ballfield Road approach to Lincoln Road						
Weekday Peak Hour	During peak 15 minutes		During other 45 minutes		Average for hour	
	avg. delay (sec/veh)	level of service	avg. delay (sec/veh)	level of service	avg. delay (sec/veh)	level of service
a.m. peak (7:00 – 8:00 a.m.)	19.2 <small>(7:45 – 8:00 a.m.)</small>	C	7.3	B	11.3	B
dismissal peak (2:45 – 3:45 p.m.)	92.2 <small>(2:55 – 3:10 p.m.)</small>	F	7.3	B	51.6	F
p.m. peak (4:45 – 5:45 p.m.)	18.8 <small>(5:15 – 5:30 p.m.)</small>	C	18.8	C	18.8	C



Traffic - Intersection Analysis

Lincoln Campus - Vehicles entering and exiting in future
Typical weekday



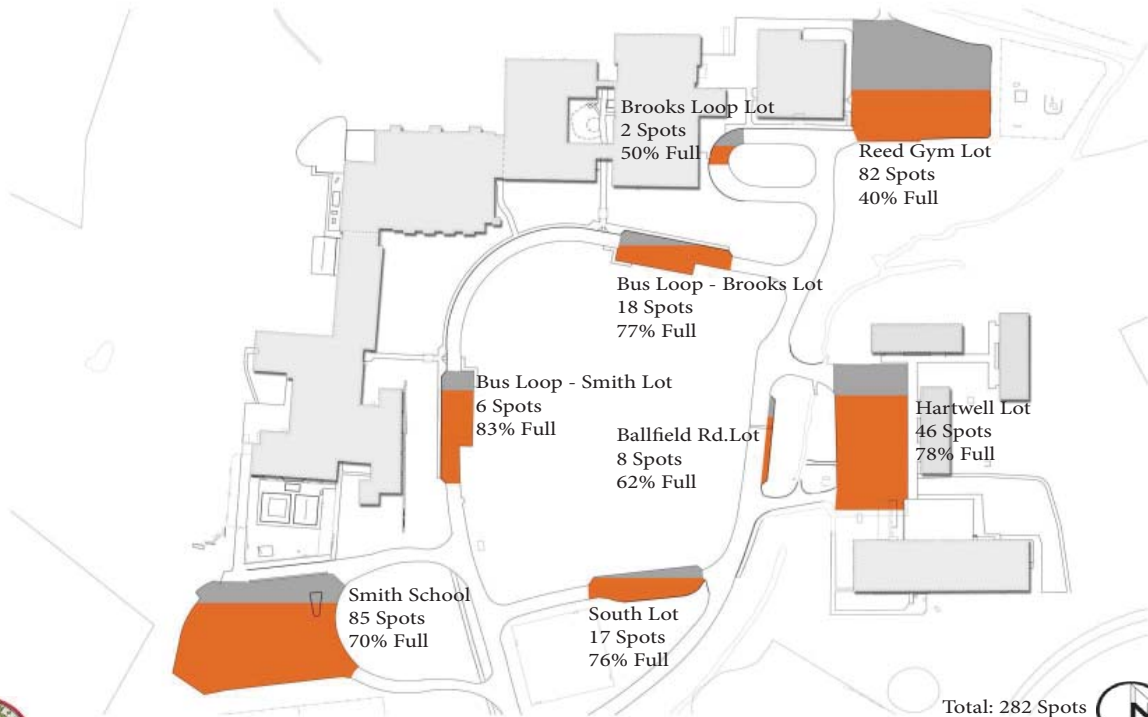
Parking



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS



Parking - Counts & Distribution



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

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Parking - Areas of Concerns

-  Delivery areas and Pick-up/Drop-off areas
-  Informal Parking and Bus Queuing



Buildings



Photo credit: Philip Greenspun



Existing Buildings



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS

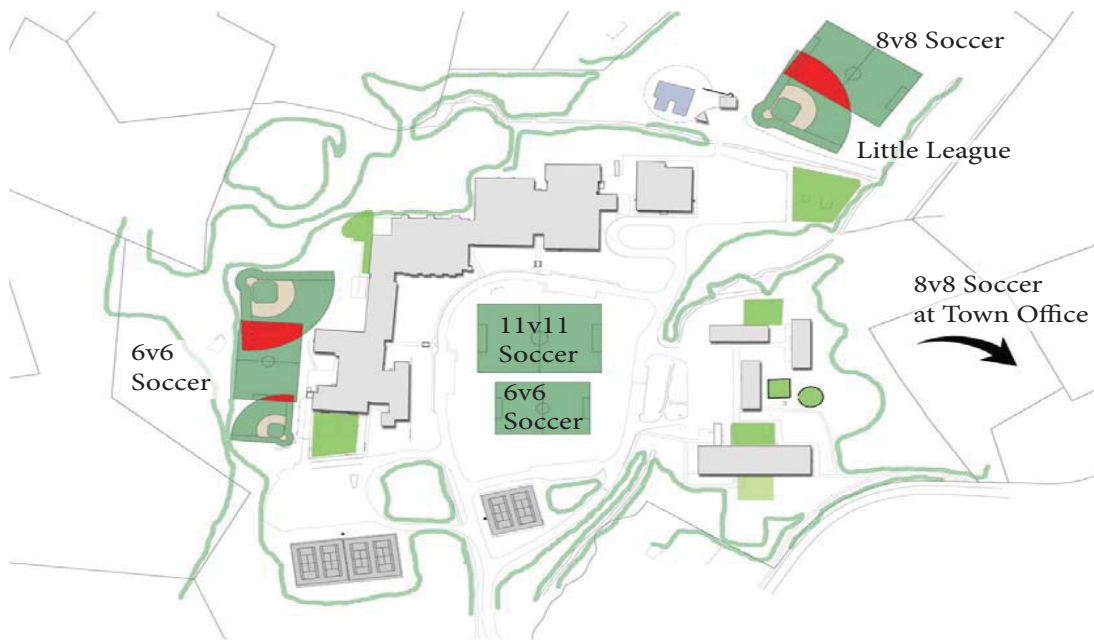
Recreational Fields



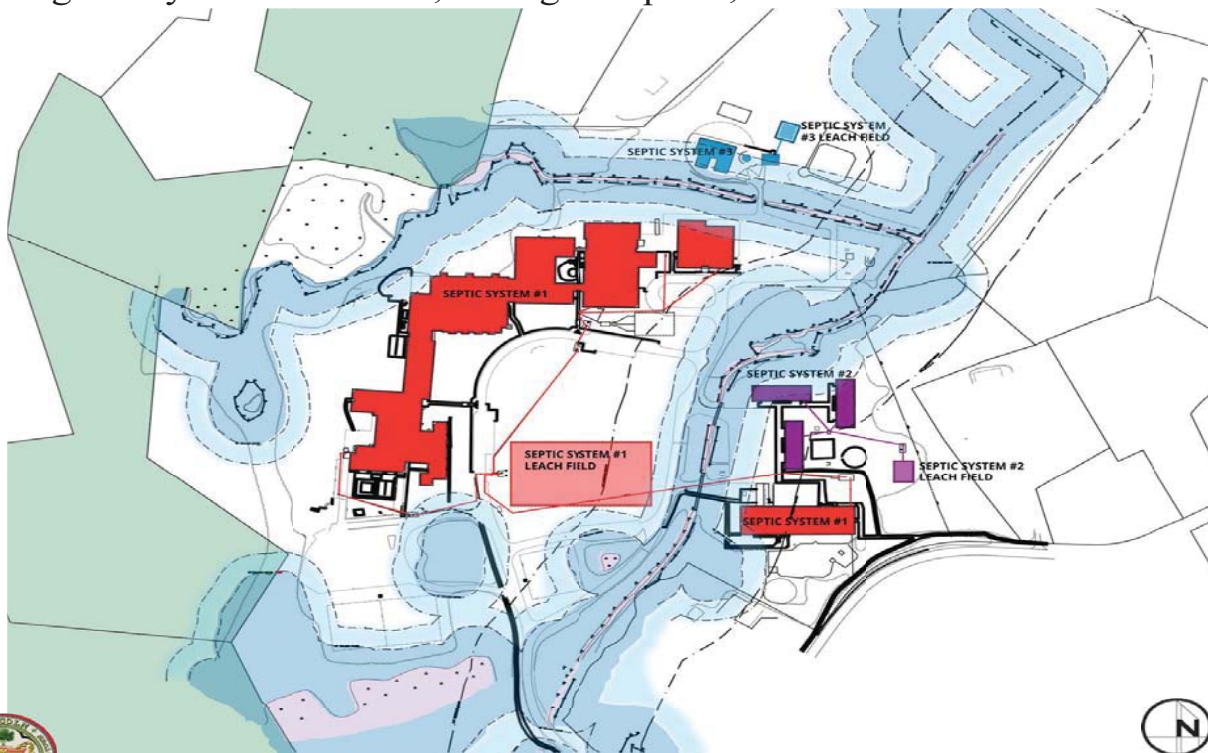
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Existing Fields & Play Areas



Regulatory - Conservation, Sewage Disposal, & Wetlands



Public Engagement

CMPC Public Forum - October 15

PTO Forum - October 30

COA Forum - October 30



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

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Primary take-away from public engagement

- The campus is a source of pride for many residents
- A Community Center will enhance the Campus
- Traffic & parking are concerns
- Pedestrian safety needs attention
- Athletic fields need improvement and expansion
- Current uses impaired by condition of buildings



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

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Primary considerations from public engagement

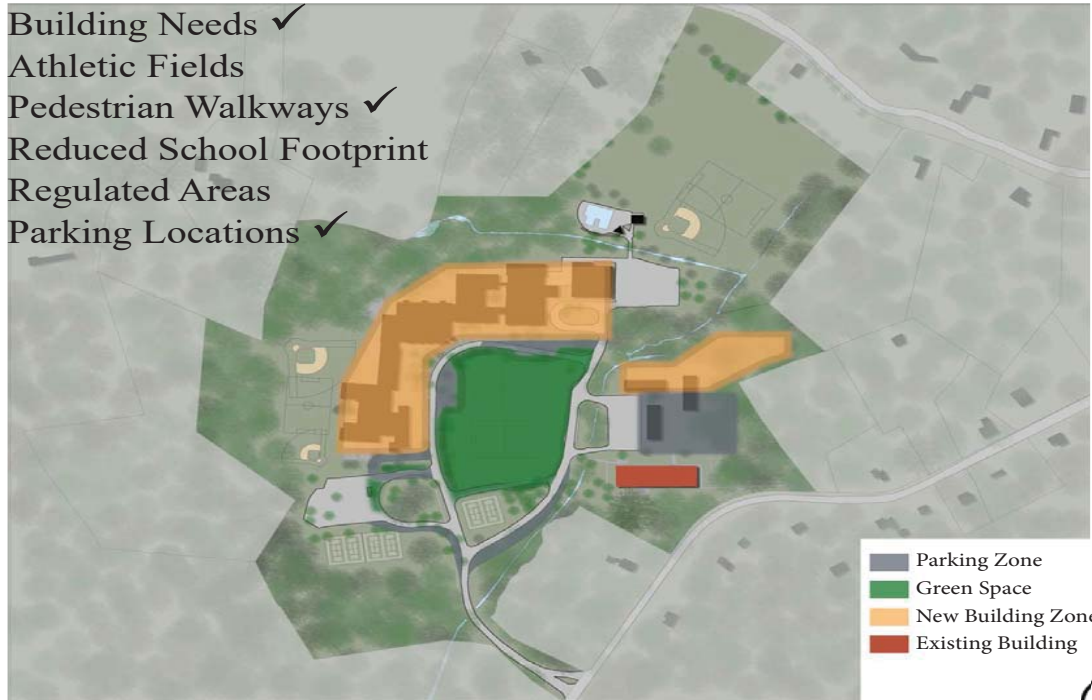
- The Campus is and must remain a gathering space that serve the entire community
- Any changes to the campus or buildings which are connected with the School must enhance learning
- There is a very strong desire to protect the connection between the buildings and the unbuilt areas
- The future projects on the campus must be balanced with the “feel” of campus as it is now



Campus Overview - Existing



Campus Land Use Zones - Example A

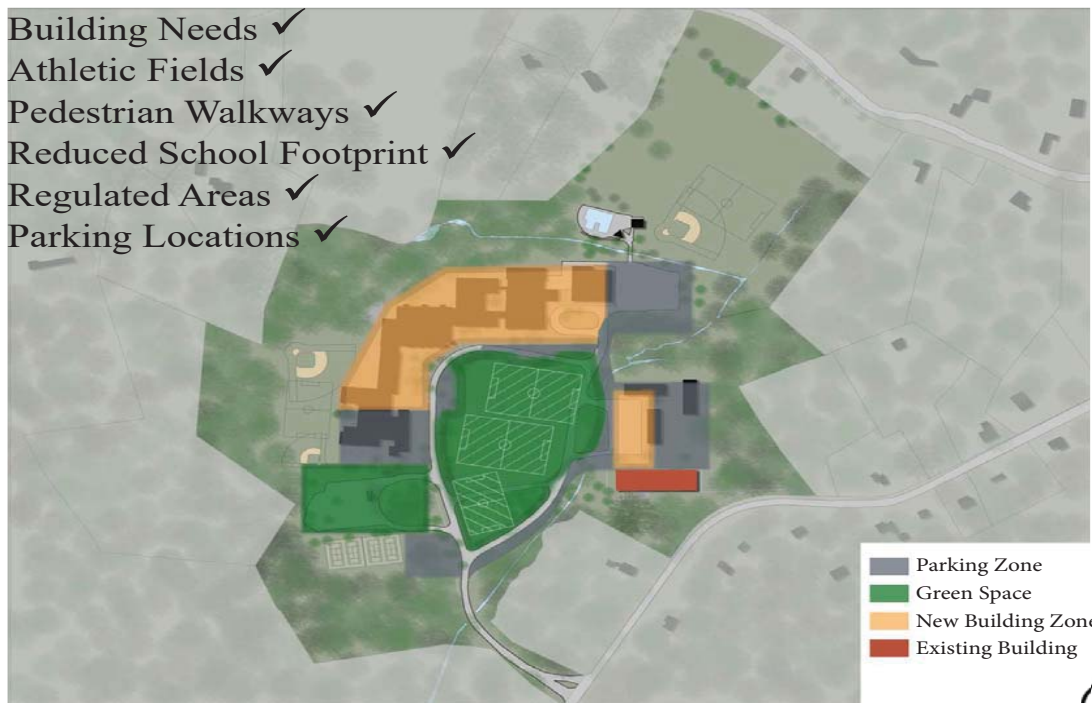


Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS



Campus Land Use Zones - Example B

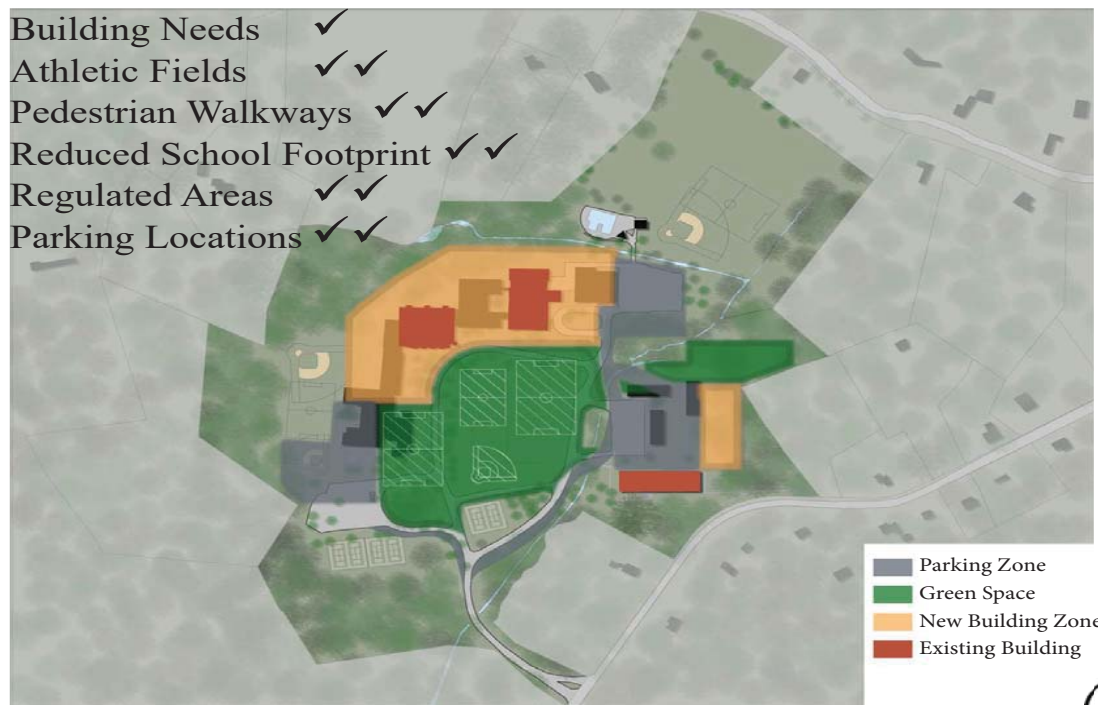


Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015

LLB ARCHITECTS



Campus Land Use Zones - Example C



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Moving forward - CMPC Meetings:

Friday, November 20, 2015 beginning 8:15 am
Hartwell Multipurpose Room

Monday, November 30, 2015 beginning 7:00 pm
Hartwell Multipurpose Room

Thursday, December 11, 2015 beginning 7:00 pm
Hartwell Multipurpose Room

Friday, December 18, 2015 beginning 8:15 am
Hartwell Multipurpose Room



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Moving forward - Online / Web resources:

Campus Master Planning Committee
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Final Report & Info: www.lincnet.org

Community Center Study Committee (CCSC)
Final Report & Info: www.lincolntown.org



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015



Campus Land Use Zones - Examples





Example A



Example B



Example C

-  Parking Zone
-  Green Space
-  New Building Zone
-  Existing Building



Ballfield Road Campus Master Plan Study - State of the Town
14 November 2015





Ballfield Road Campus
Master Planning Committee
State of the Town

14 November 2015

Thank you!

November 14th State Of The Town

Questionnaire



Campus Master Planning Committee
 State of the Town Meeting - Public Feedback Survey
 Lincoln, Massachusetts
 November 14, 2015

We recommend answering these questions after viewing the slideshow presentation today, as the information presented could influence your answers.

Fill in the bubble that best represents your opinion on the given statement.

- 1: Field space can be gained by reducing the overall footprint of the Lincoln School. This could mean elimination of portions of the existing buildings, and potentially a two-story school.

Gaining additional field space is a worthy reason to reduce the overall school footprint.

- 2: The distances of the parking lots from the building entrances are a major factor in creating the character of the campus. However, as a result, people park outside of the designated parking areas in order to be closer to their destination.

Locating parking near building entrances and fields is more important than the character of the campus.

- 3: The campus experiences more vehicular than pedestrian traffic. The current roadway encircling the center green, and walkway in front of the school buildings, does not support the natural walking patterns that children and adults use to traverse the campus.

Pedestrian walkways should take precedence over vehicular drives and parking lots.

- 4: The character of the campus is strongly rooted in the open spaces and the location of the buildings. Changes to any element may alter the character of the campus, but such changes could improve the character as easily as they diminish it.

The campus character is tied directly to the current footprint of the buildings.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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More questions on the back

Campus Master Planning Committee
 State of the Town Meeting - Public Feedback Survey
 Lincoln, Massachusetts
 November 14, 2015

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
5: Reducing the overall footprint of the school would mean more new construction and less renovation. This may also mean greater cost but brings a wider range of options in designing the educational environment. We should consider reducing the footprint of the school in order to gain building efficiencies, better educational layout, and more space on campus for playing fields and other uses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6: Lincoln has spent a considerable amount of time and effort investigating the need and projected costs for both school and community center projects. All of the cost projections are based on projects at the conceptual stage and thus are provided as a range for that particular concept. As this is the first time the two projects are considered for the same site as collaborative projects, the final costs may vary from previous projections. The value (functionality, appropriateness, and life expectancy) of the projects should take precedence in decision making if the costs exceed the previously projected costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7: The site has many overlapping regulated areas (wetland buffers, riverfront setbacks). There is already considerable intrusion into these areas by current parking lots, roads, and buildings. There may be opportunity to reduce this intrusion, but achieving this may increase project costs, decrease building opportunities, or limit location of parking and roads. Future projects should aim to reduce the impact on the regulated areas to the extent that is practical.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for your input!



November 14th State Of The Town

Responses to questionnaire

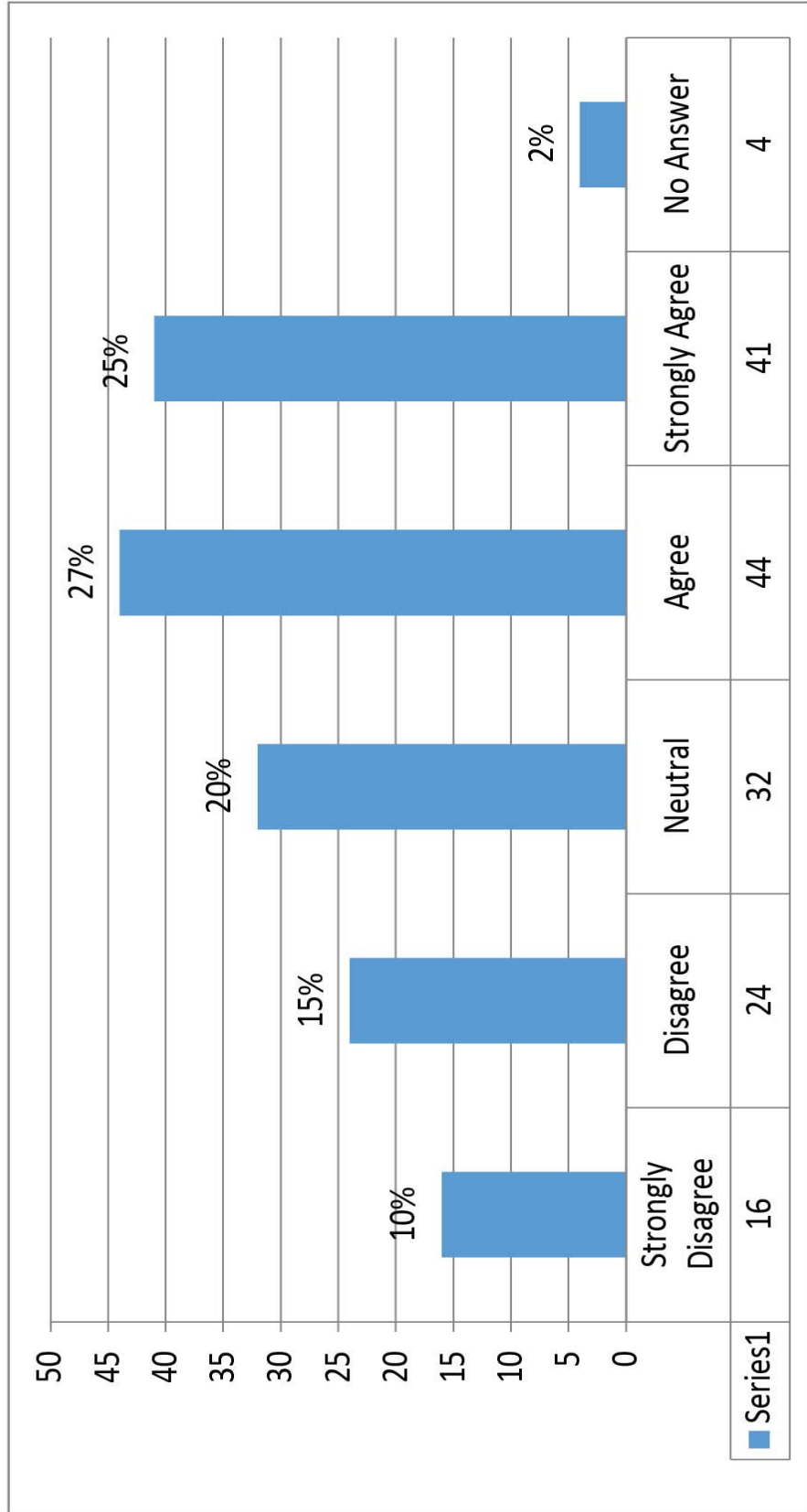


Question #1:

Field space can be gained by reducing the overall footprint of the Lincoln School. This could mean elimination of portions of the existing buildings, and potentially a two-story school.

Gaining additional field space is a worthy reason to reduce the overall school footprint.

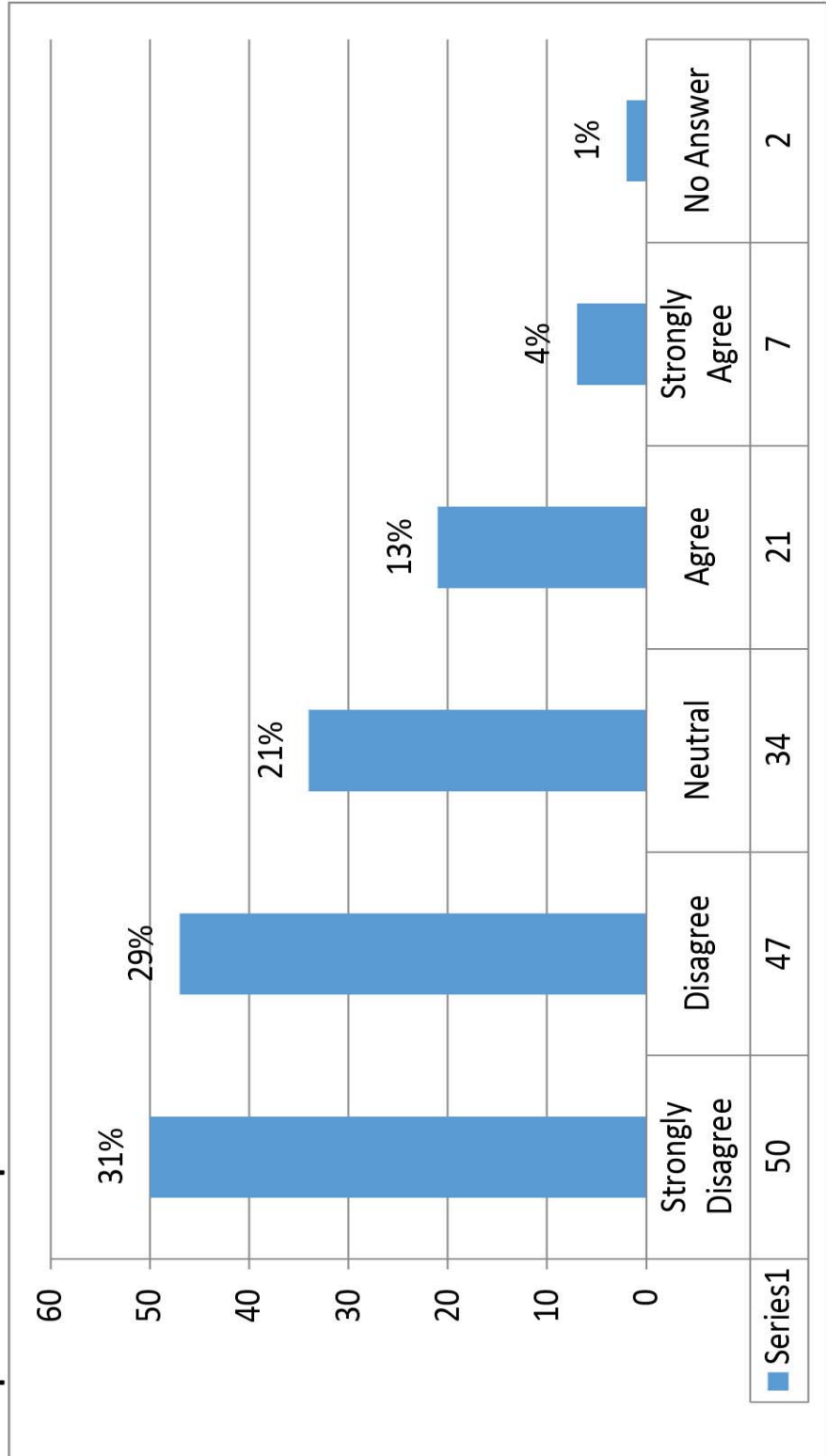
161 Responses



Question #2

The distances of the parking lots from the building entrances are a major factor in creating the character of the campus. However, as a result, people park outside of the designated parking areas in order to be closer to their destination.

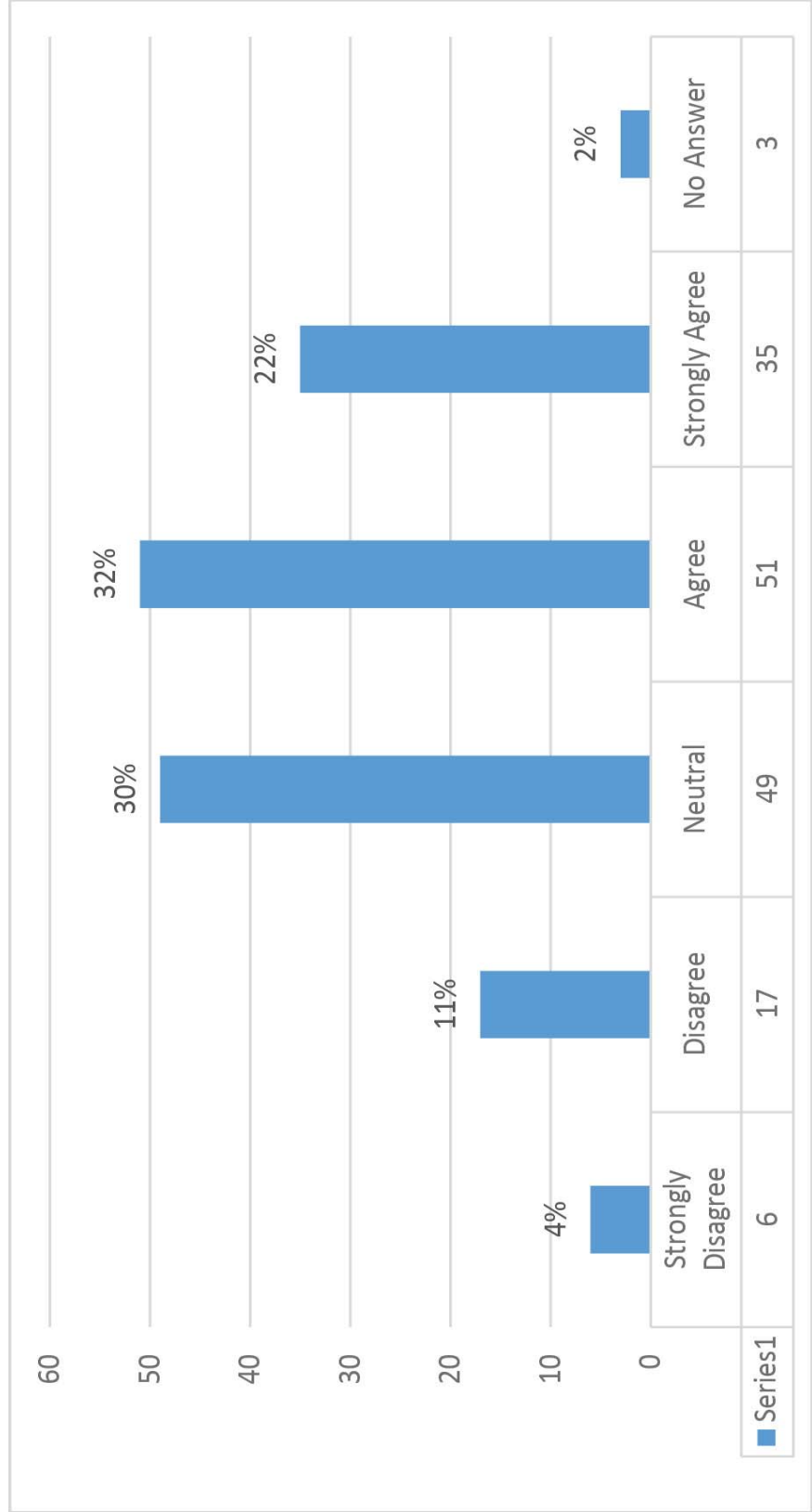
Locating parking near building entrances and fields is more important than the character of the campus. - 161 Responses



Question #3

The campus experiences more vehicular than pedestrian traffic. The current roadway encircling the center green, and walkway in front of the school buildings, does not support the natural walking patterns that children and adults use to traverse the campus.

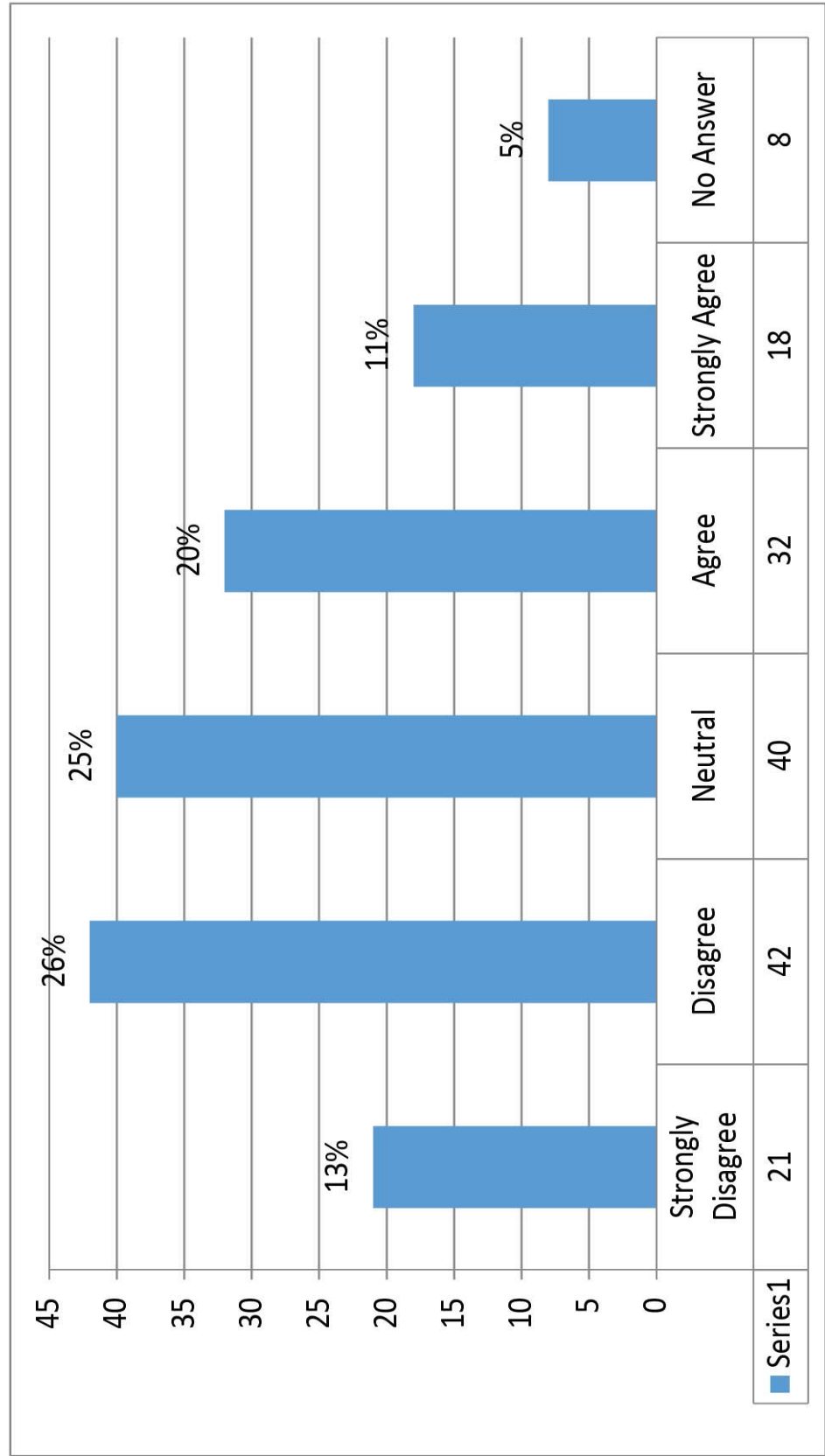
Pedestrian walkways should take precedence over vehicular drives and parking lots. 161 Responses



Question #4

The character of the campus is strongly rooted in the open spaces and the location of the buildings. Changes to any element may alter the character of the campus, but such changes could improve the character as easily as they diminish it.

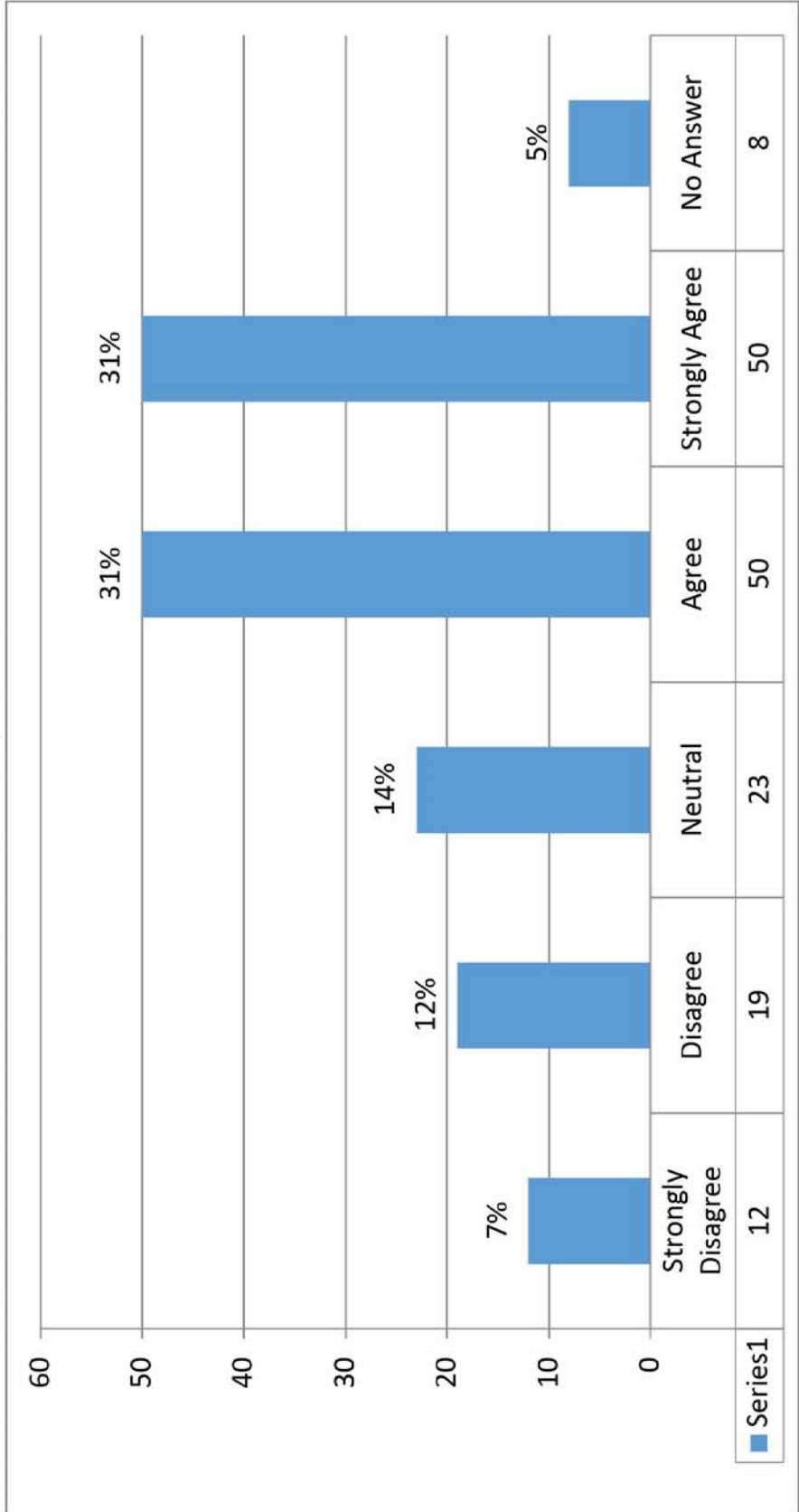
The campus character is tied directly to the current footprint of the buildings. - 161 Responses



Question #5

Reducing the overall footprint of the school would mean more new construction and less renovation. This may also mean greater cost but brings a wider range of options in designing the educational environment.

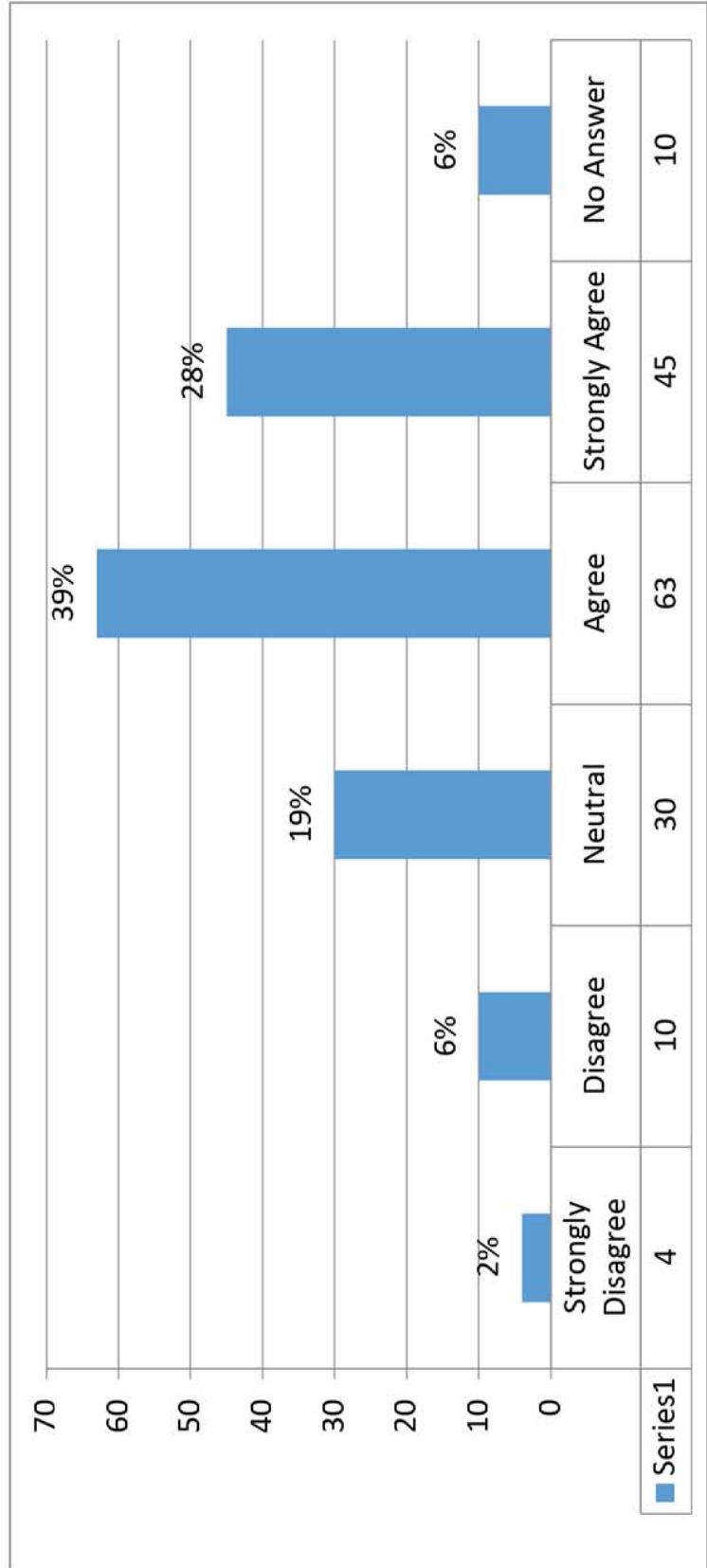
We should consider reducing the footprint of the school in order to gain building efficiencies, better educational layout, and more space on campus for playing fields and other uses. 162 Responses



Question #6

Lincoln has spent a considerable amount of time and effort investigating the need and projected costs for both school and community center projects. All of the cost projections are based on projects at the conceptual stage and thus are provided as a range for that particular concept. As this is the first time the two projects are considered for the same site as collaborative projects, the final costs may vary from previous projections.

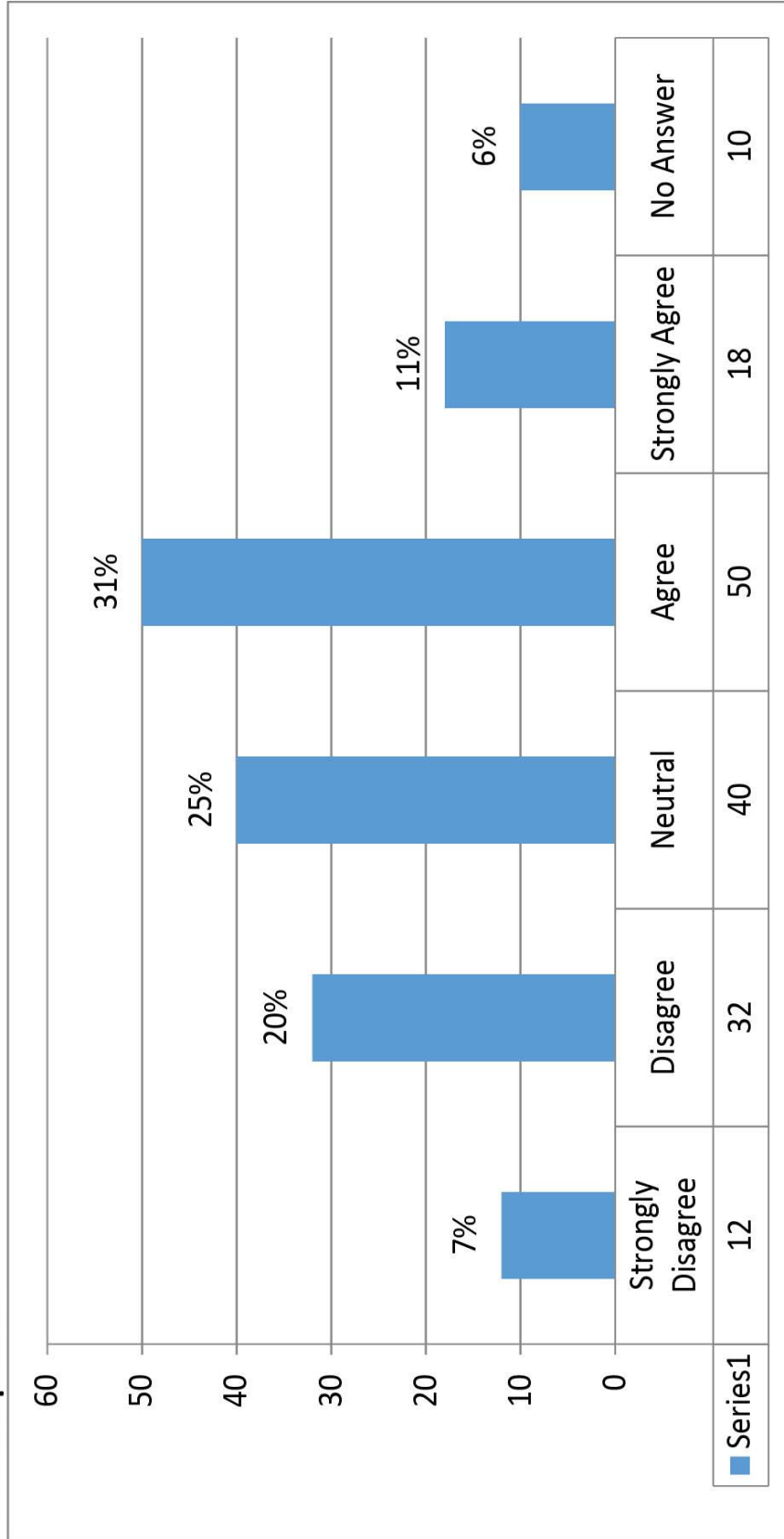
The value (functionality, appropriateness, and life expectancy) of the projects should take precedence in decision making if the costs exceed the previously projected costs. 162 Responses



Question #7

The site has many overlapping regulated areas (wetland buffers, riverfront setbacks). There is already considerable intrusion into these areas by current parking lots, roads, and buildings. There may be opportunity to reduce this intrusion, but achieving this may increase project costs, decrease building opportunities, or limit location of parking and roads.

Future projects should aim to reduce the impact on the regulated areas to the extent that is practical.
- 162 Responses



Engineering Materials

Traffic Counts

Turning Movements

Lincoln Road travel speeds

Projected traffic increase chart

Intersection operation table

Parking Occupany - current

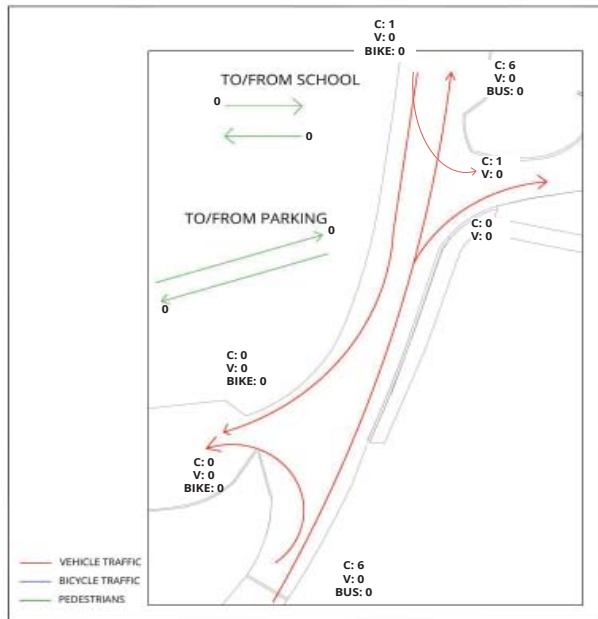
Parking Occupancy - projected



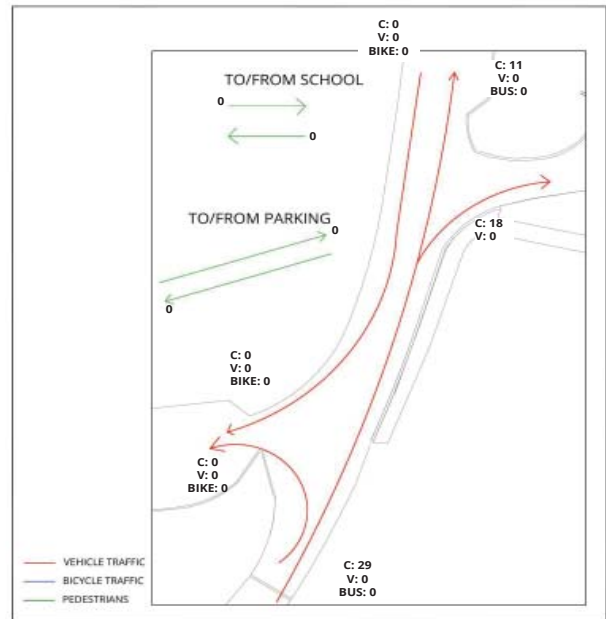
Engineering Materials

On-campus turning movements

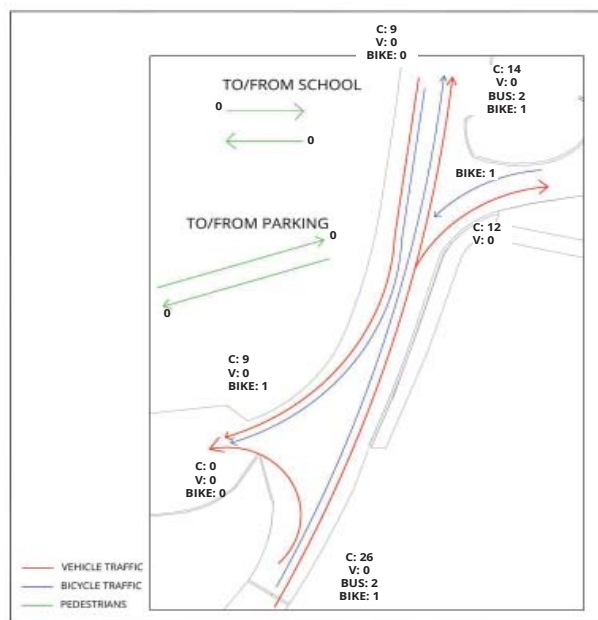




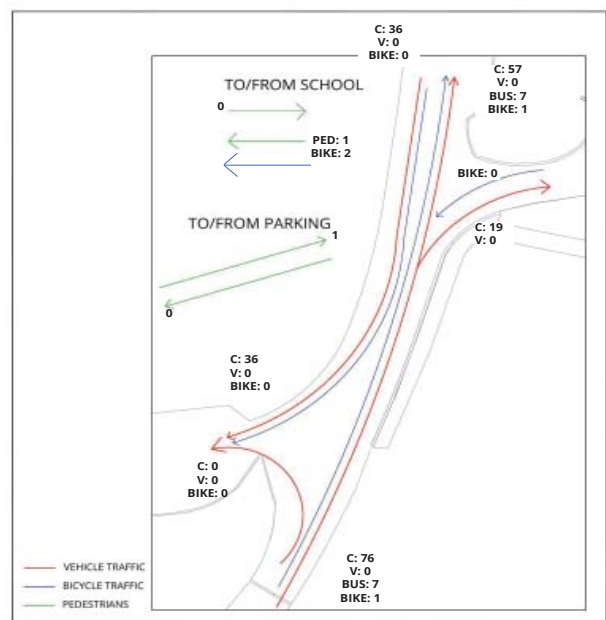
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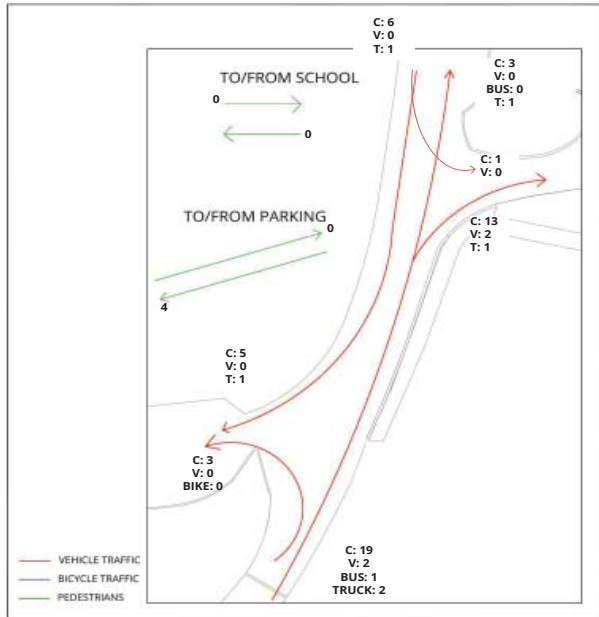
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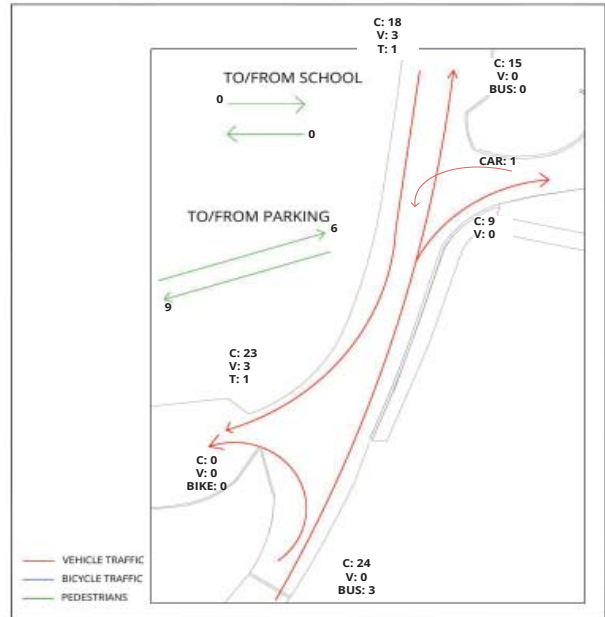


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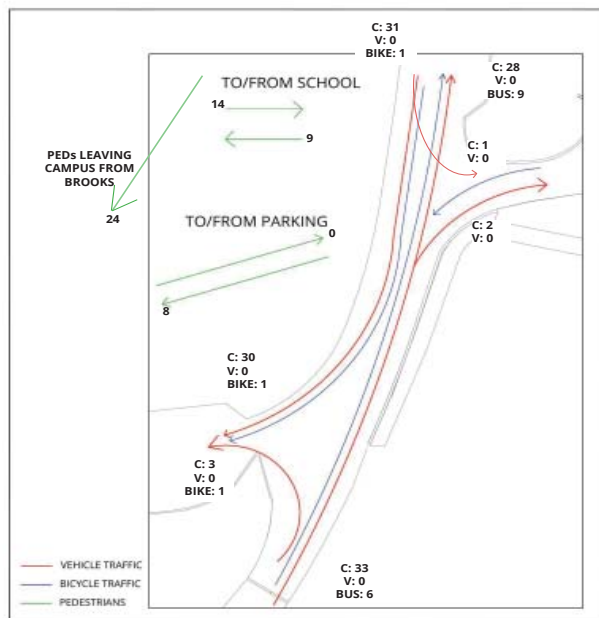


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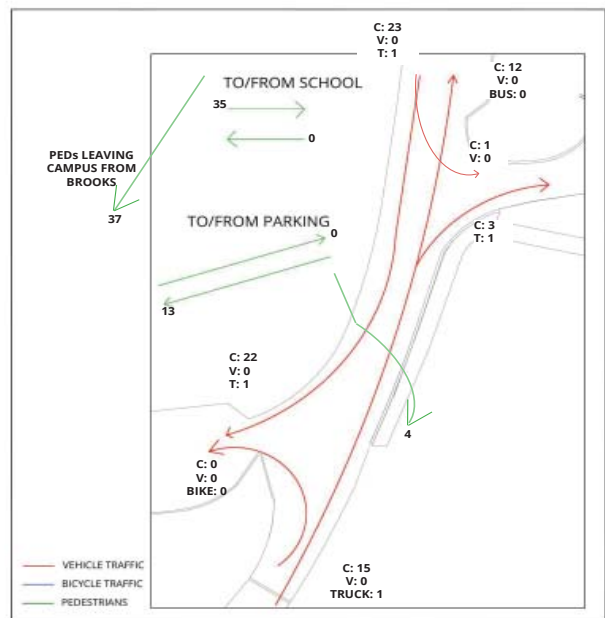


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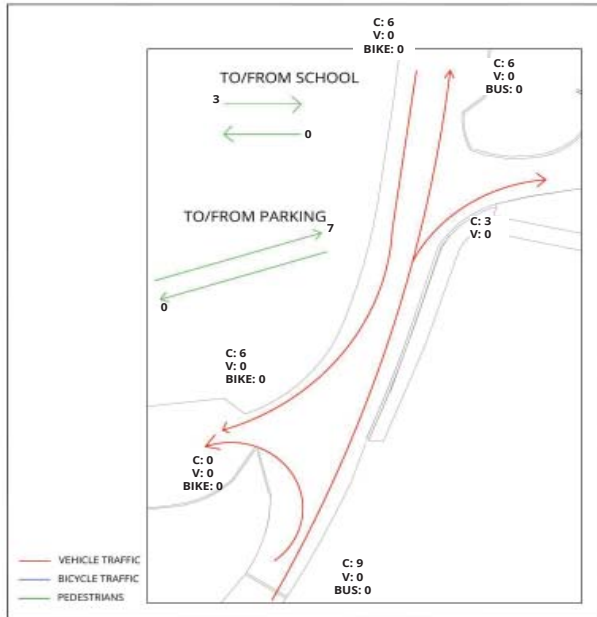


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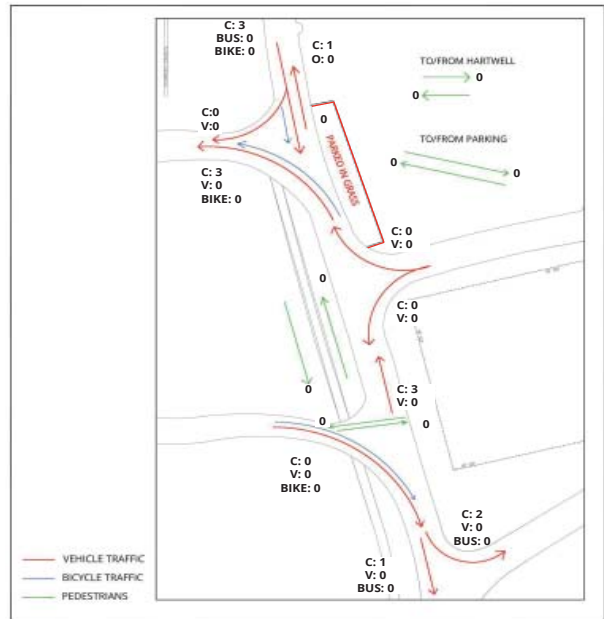


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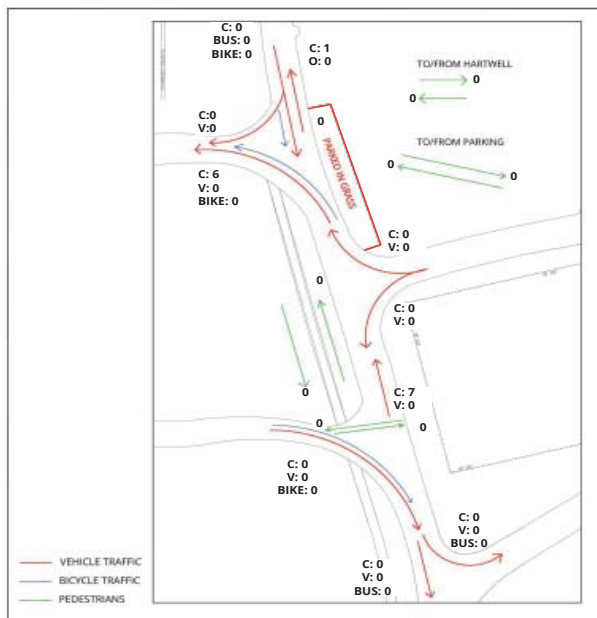


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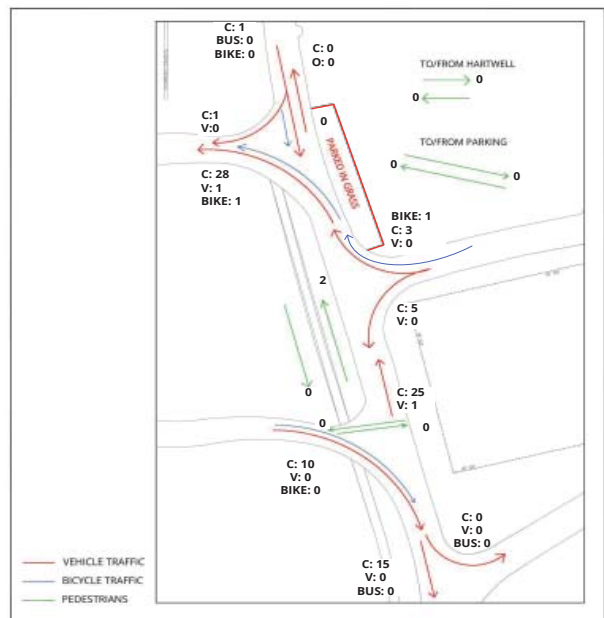


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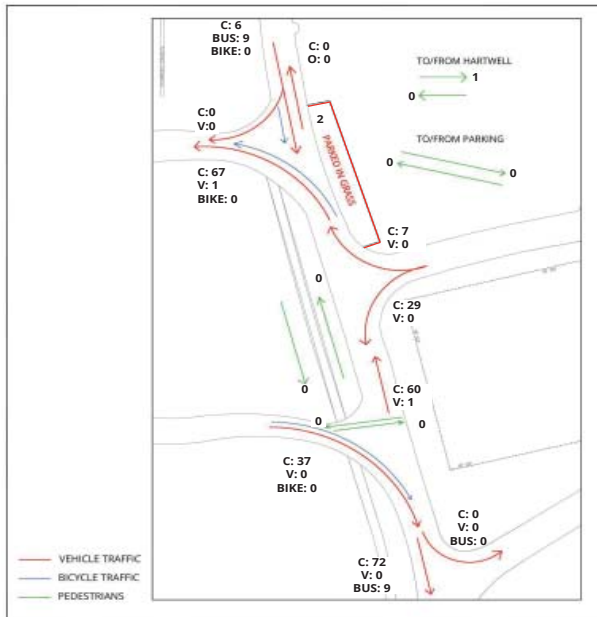


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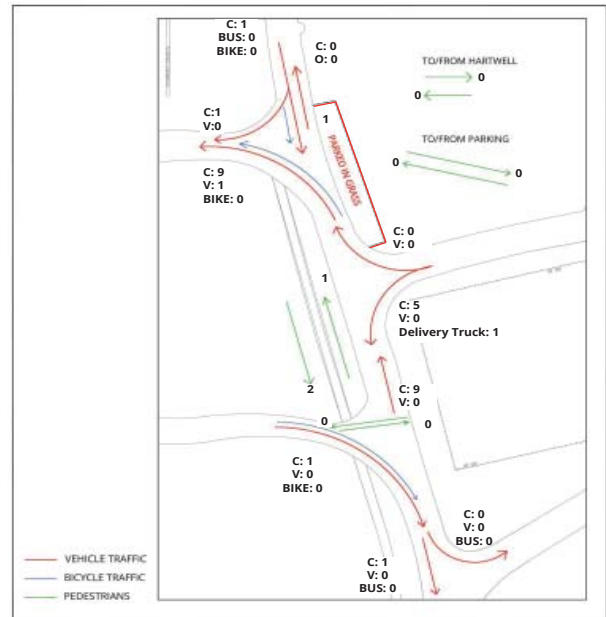
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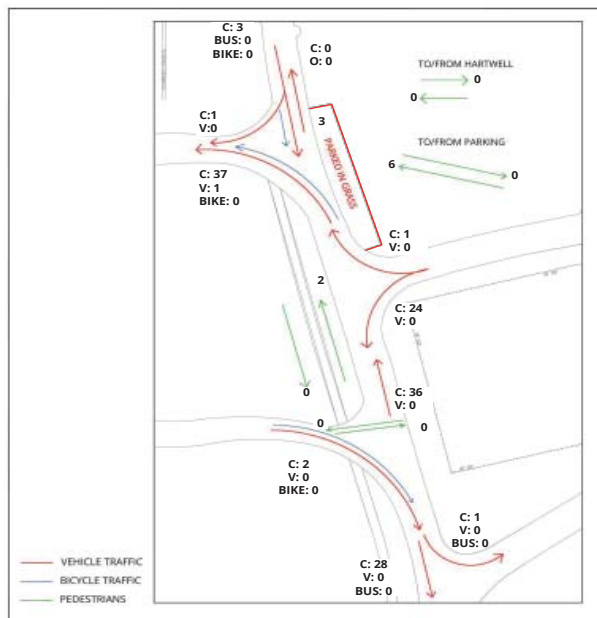
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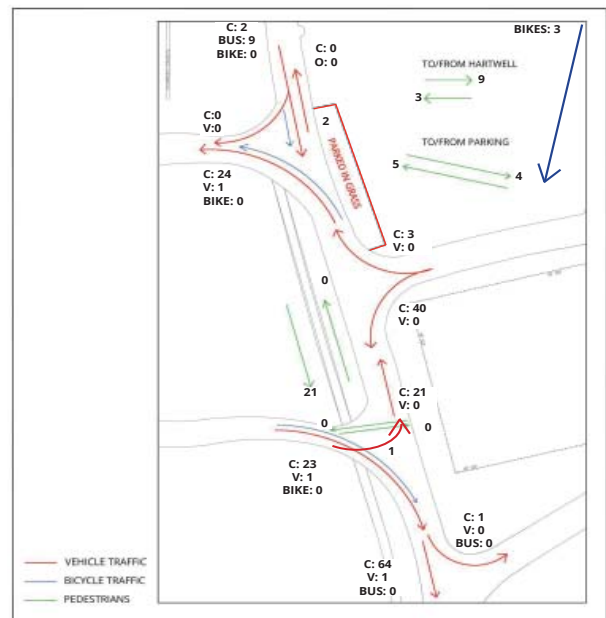
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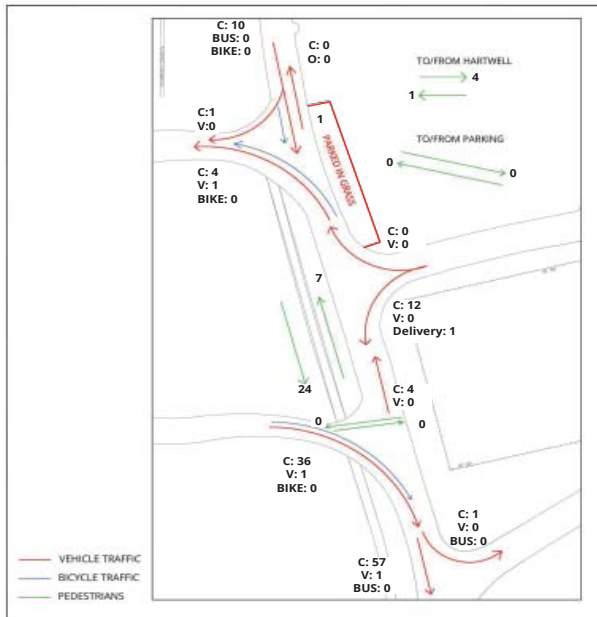
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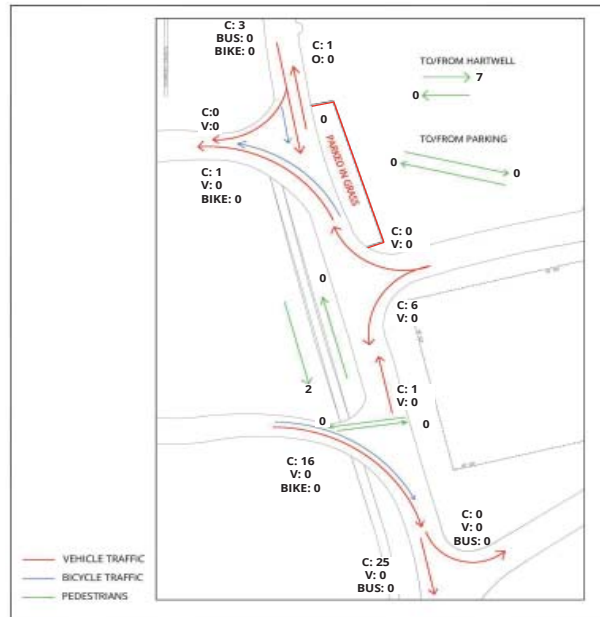


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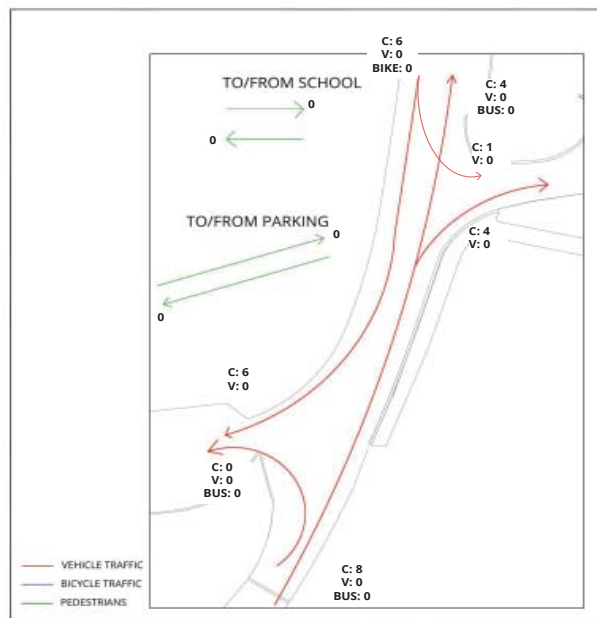
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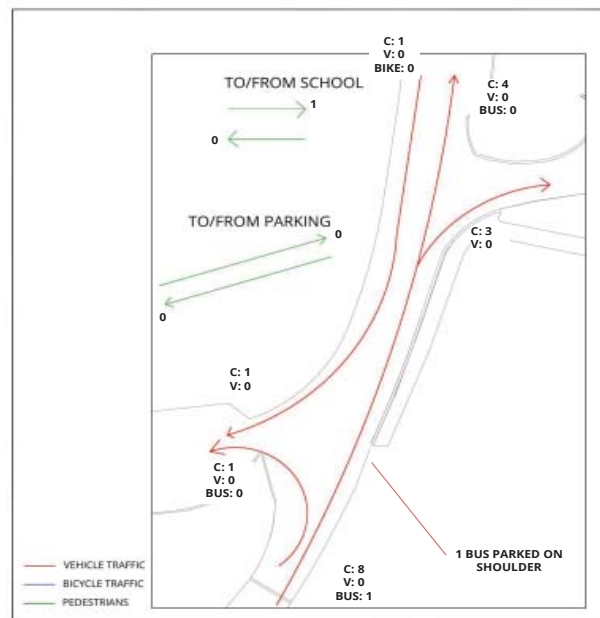
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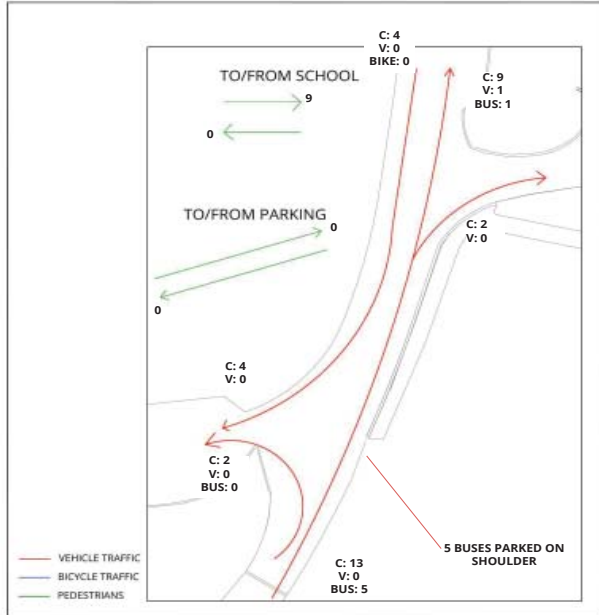
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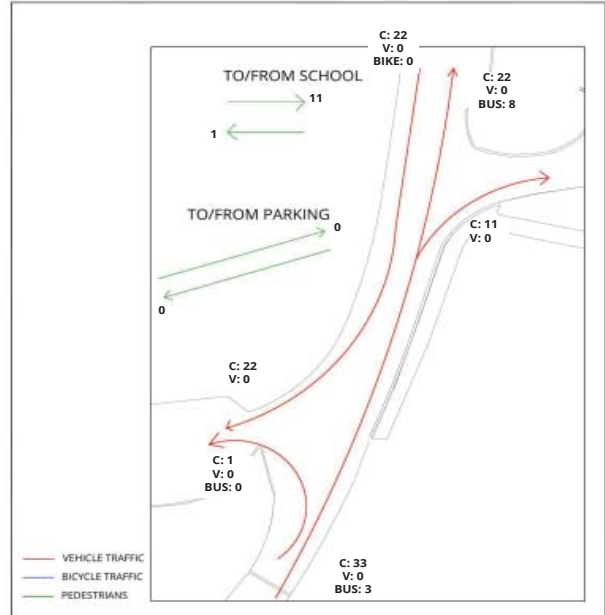


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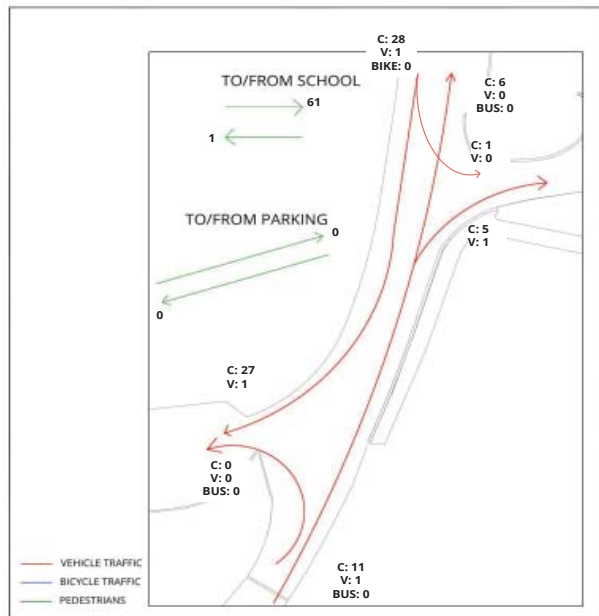


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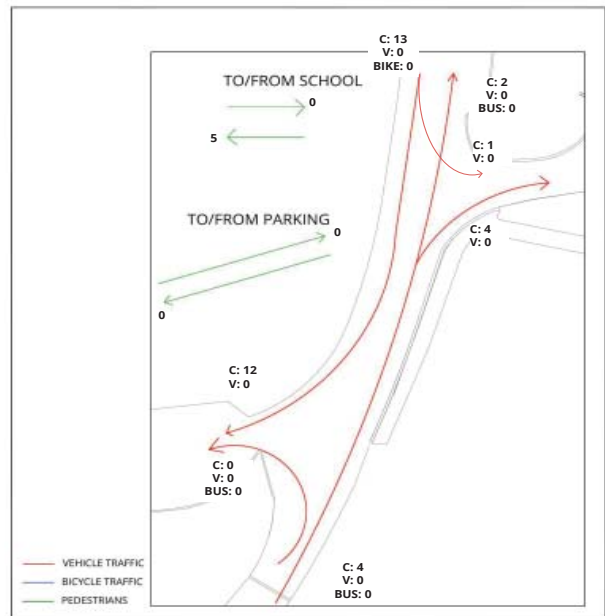


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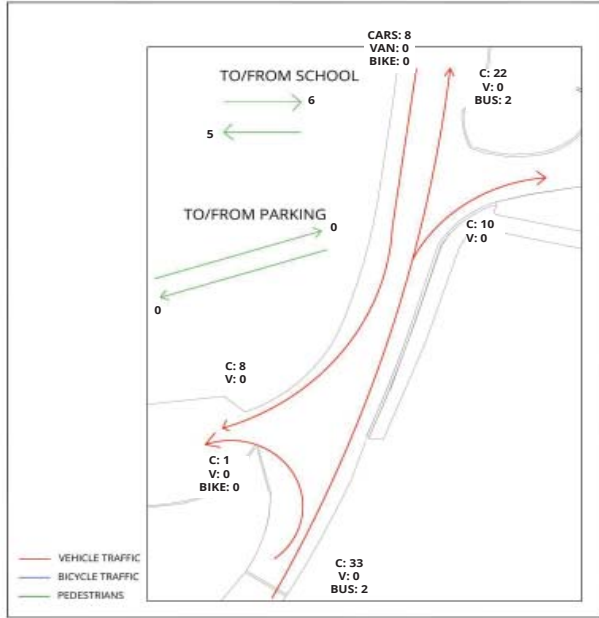


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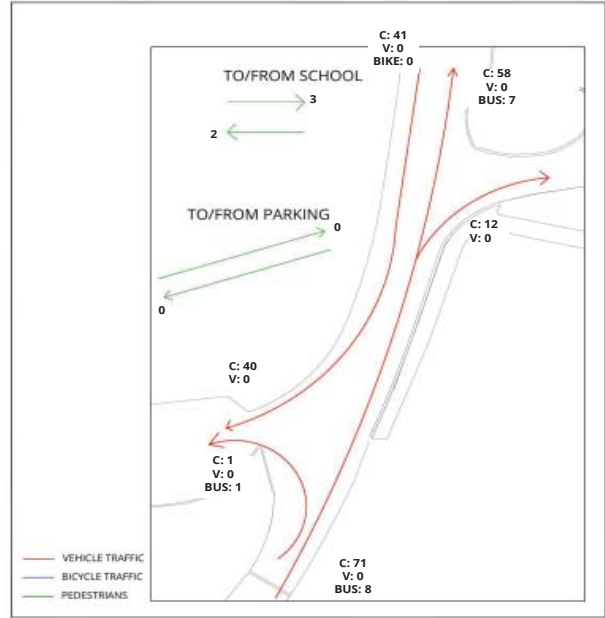
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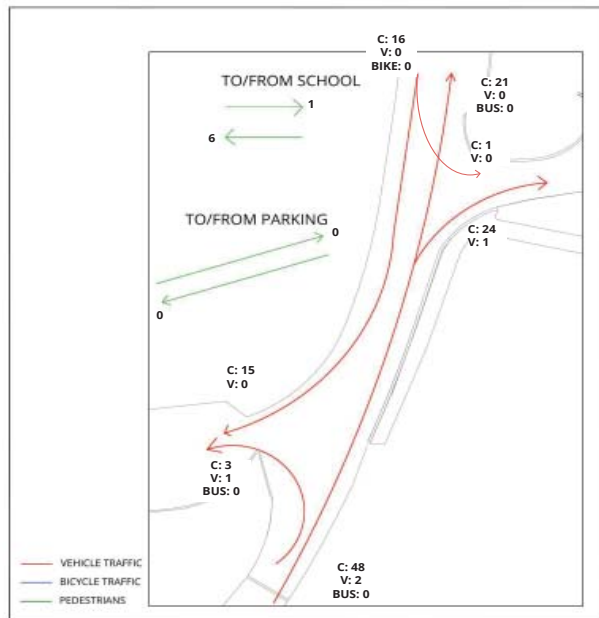
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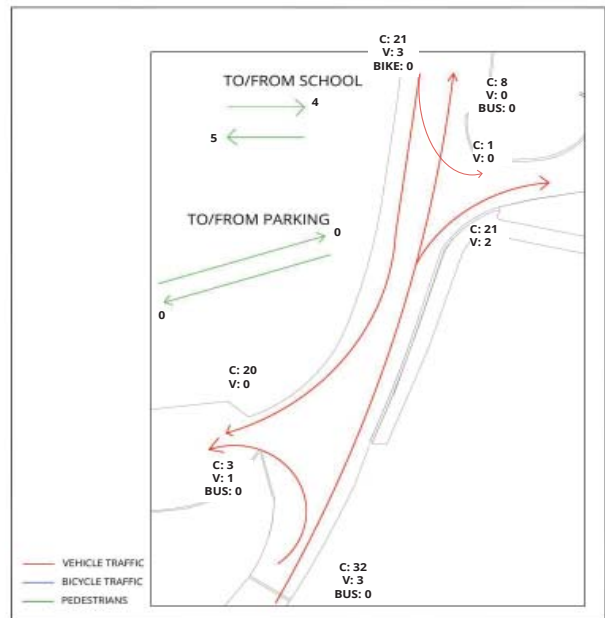
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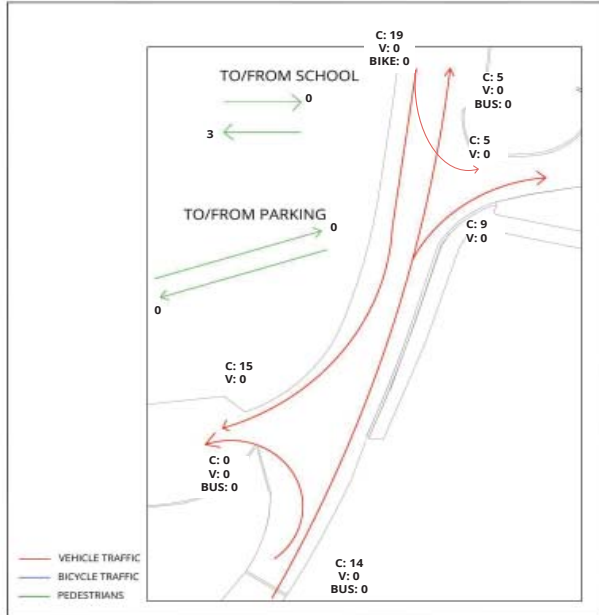
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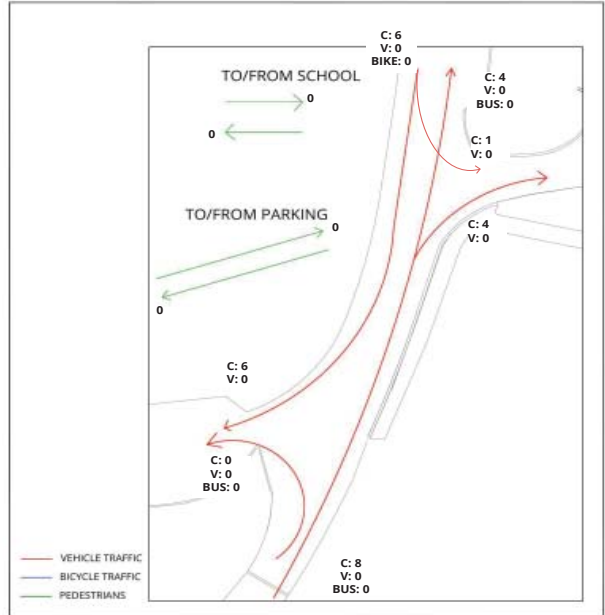


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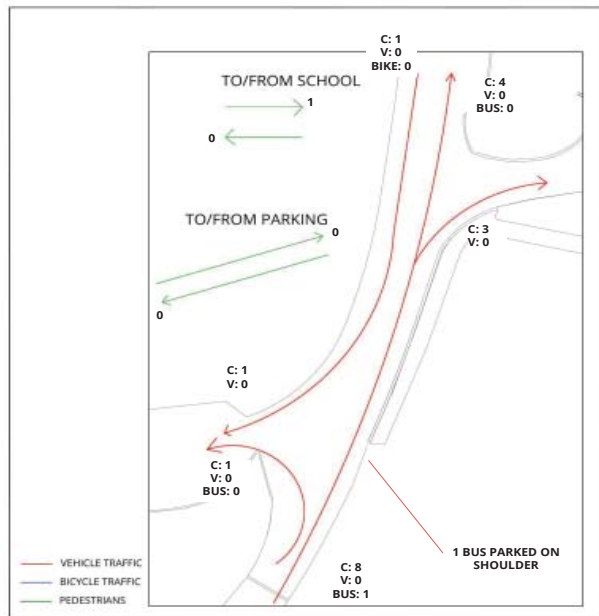


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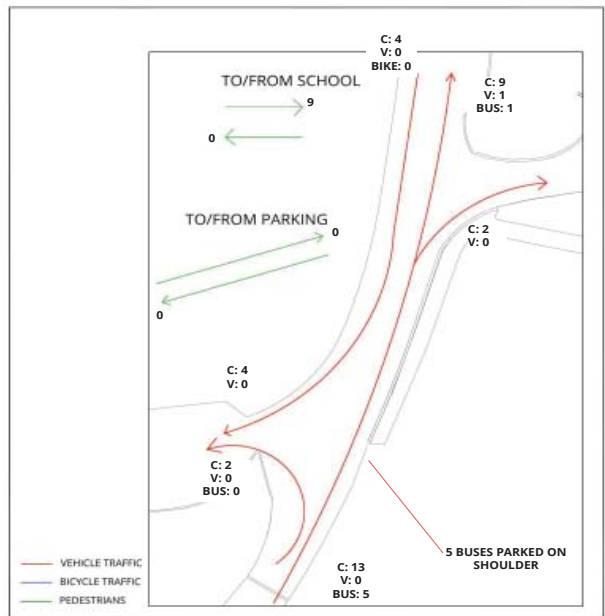


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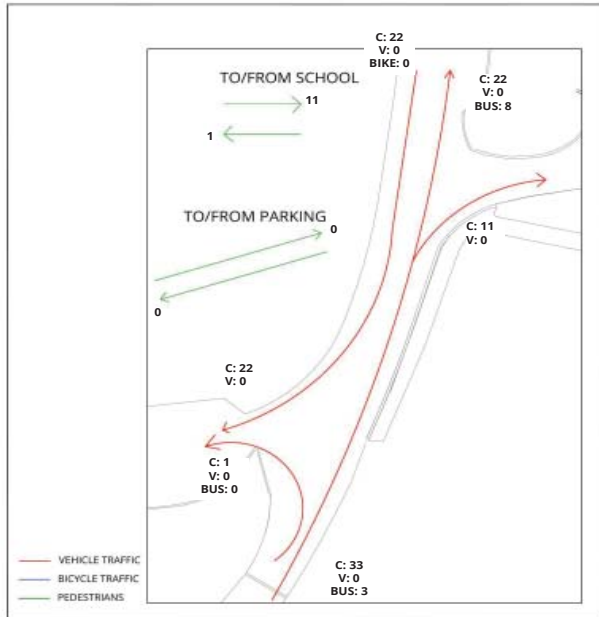


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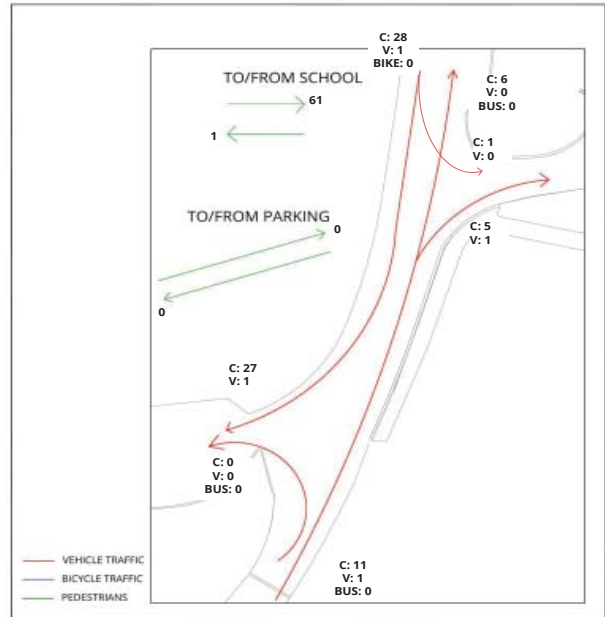
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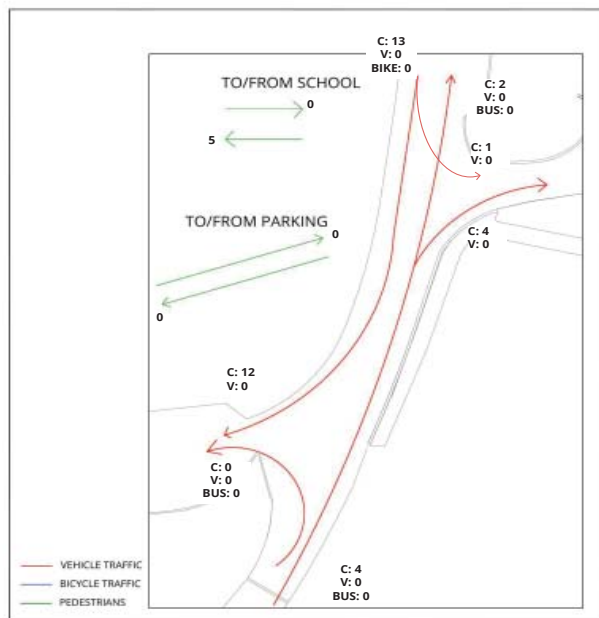
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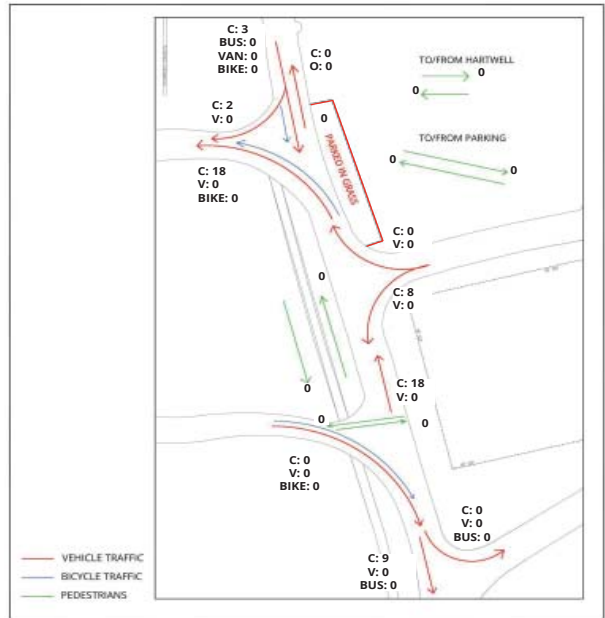
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2:45 - 3:00 AM
09/21/2015
TRAFFIC MOVEMENTS AT HARTWELL



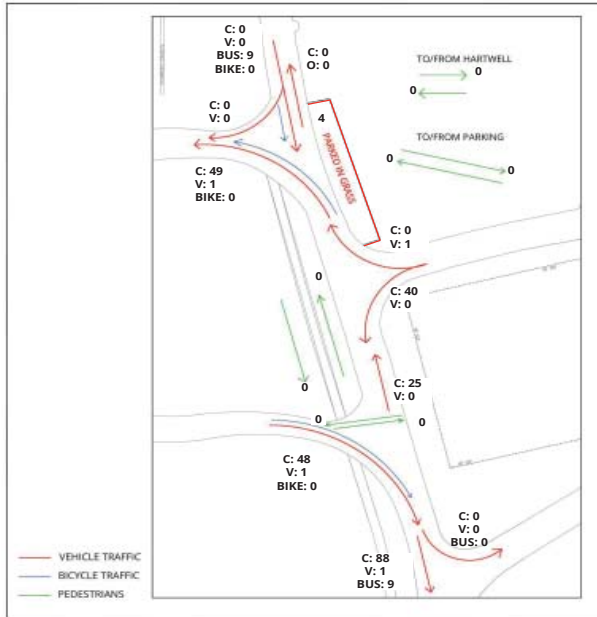
LLB ARCHITECTS
Lincoln, MA
Ballfield Road Campus Master Plan
Project Number: 1531
3:00 - 3:15 AM
09/21/2015
TRAFFIC MOVEMENTS AT HARTWELL



LLB ARCHITECTS
Lincoln, MA
Ballfield Road Campus Master Plan
Project Number: 1531
3:15 - 3:30 AM
09/21/2015
TRAFFIC MOVEMENTS AT HARTWELL



LLB ARCHITECTS
Lincoln, MA
Ballfield Road Campus Master Plan
Project Number: 1531
7:30 - 7:45 AM
09/21/15
TRAFFIC MOVEMENTS AT SMITH SCHOOL

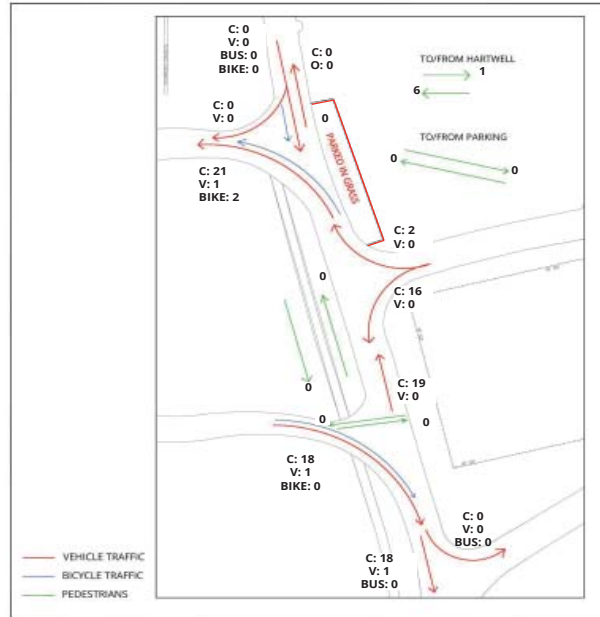


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 Portsmouth, N.H. 03801
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Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

7:45 - 8:00 AM
 09/21/15

TRAFFIC MOVEMENTS AT SMITH SCHOOL

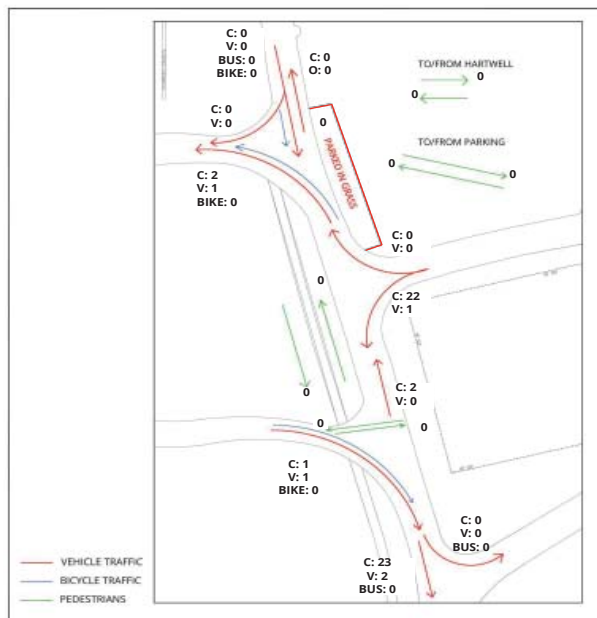


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Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

8:00 - 8:15 AM
 09/21/15

TRAFFIC MOVEMENTS AT SMITH SCHOOL

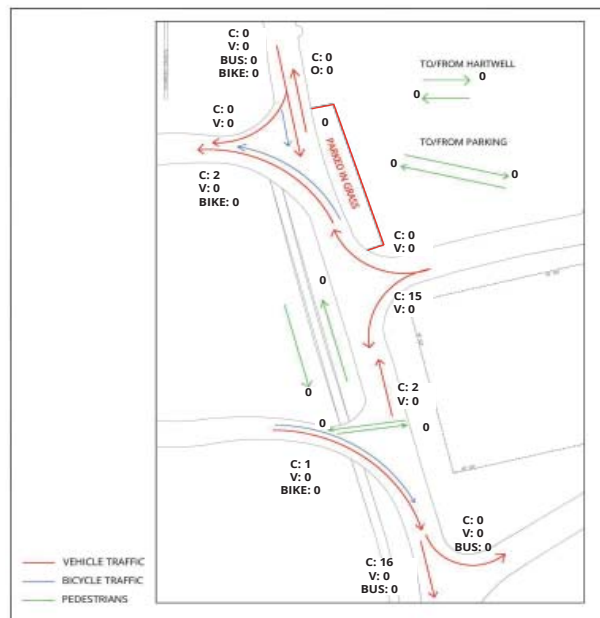


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 Ballfield Road Campus Master Plan
 Project Number: 1531

8:15 - 8:30 AM
 09/21/15

TRAFFIC MOVEMENTS AT SMITH SCHOOL

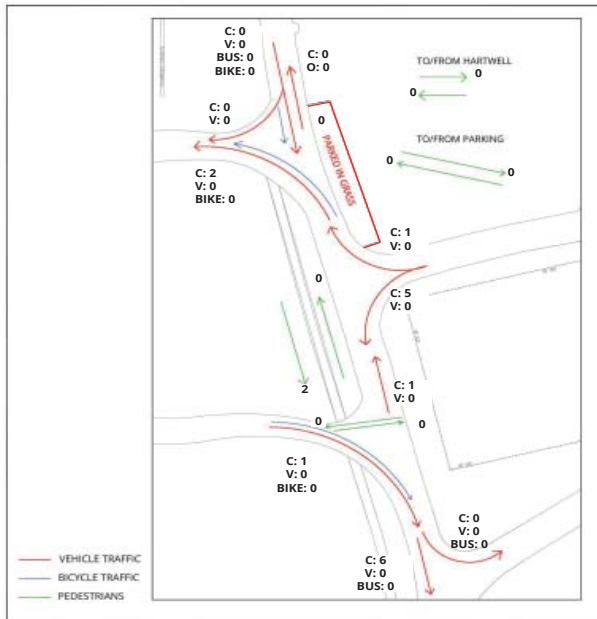


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 Project Number: 1531

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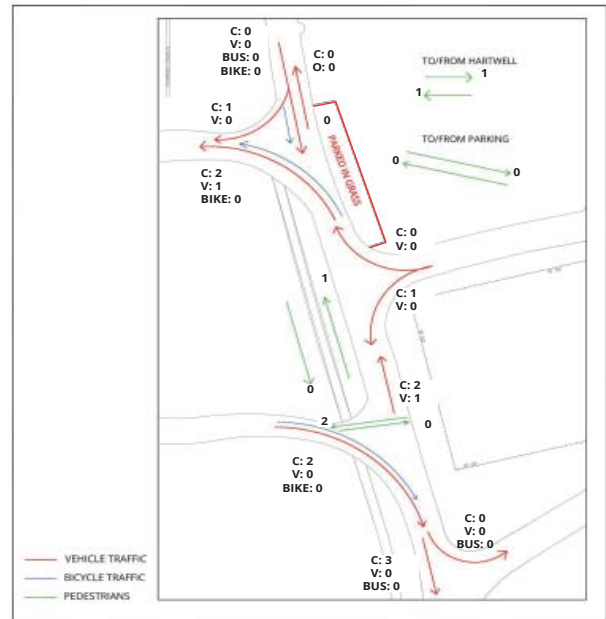


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Lincoln, MA
Ballfield Road Campus Master Plan
Project Number: 1531

2:00 - 2:15 PM
09/21/15

TRAFFIC MOVEMENTS AT SMITH SCHOOL

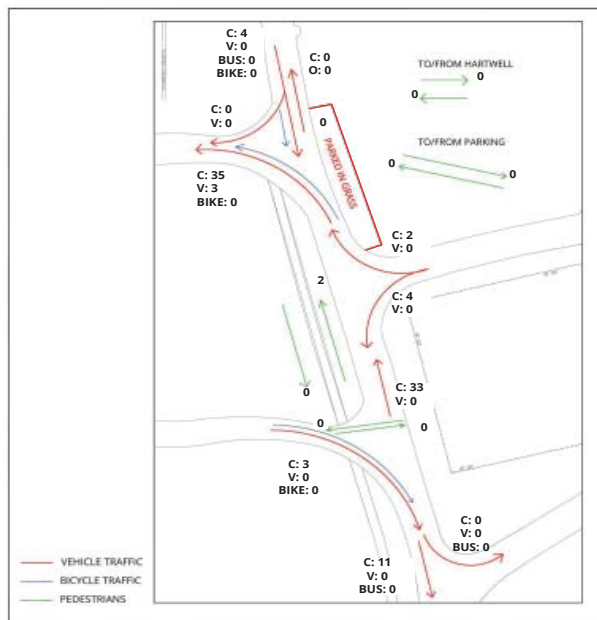


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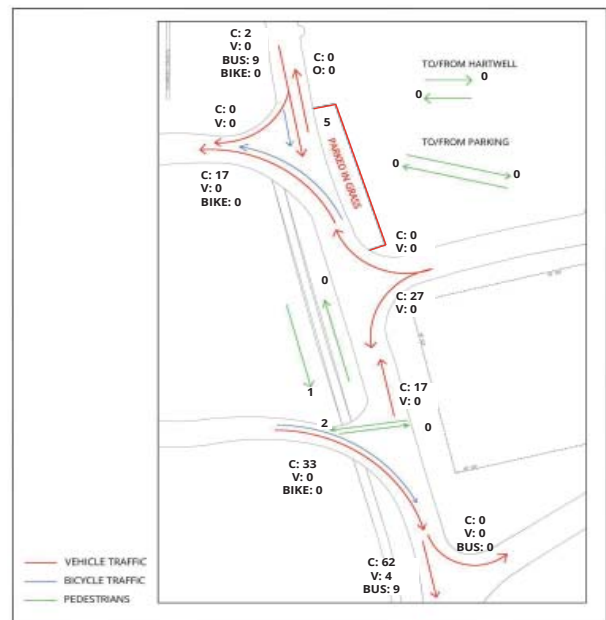


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Project Number: 1531

2:30 - 2:45 PM
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TRAFFIC MOVEMENTS AT SMITH SCHOOL

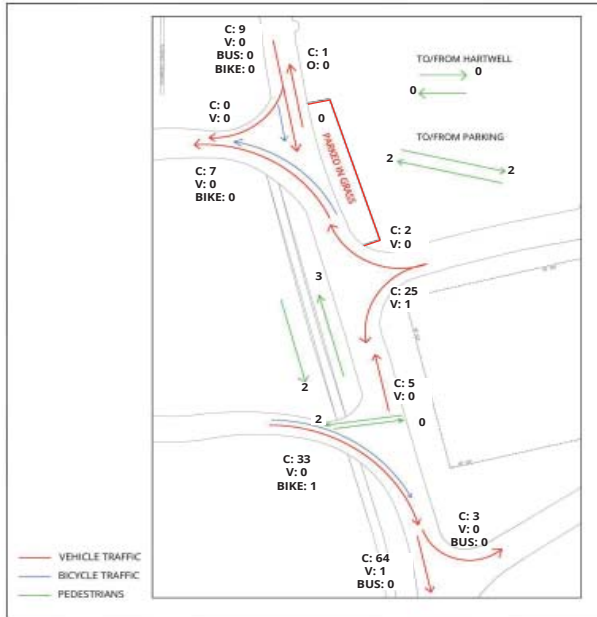


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Project Number: 1531

2:45 - 3:00 PM
09/21/15

TRAFFIC MOVEMENTS AT SMITH SCHOOL

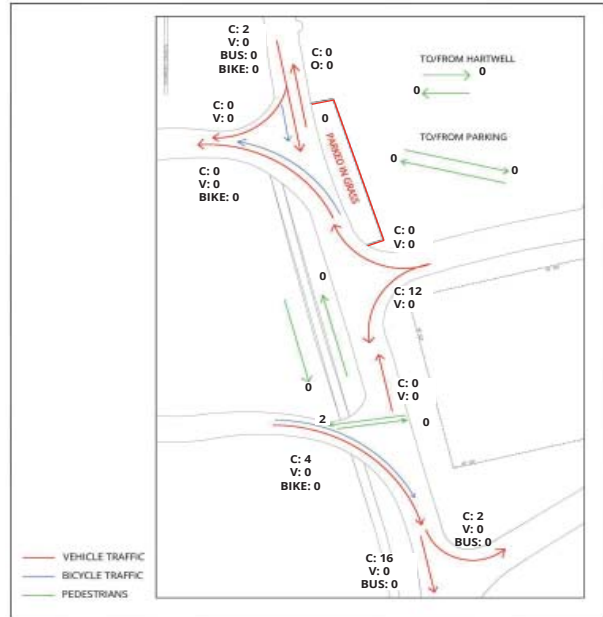


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Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

3:00 - 3:15 PM
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TRAFFIC MOVEMENTS AT SMITH SCHOOL

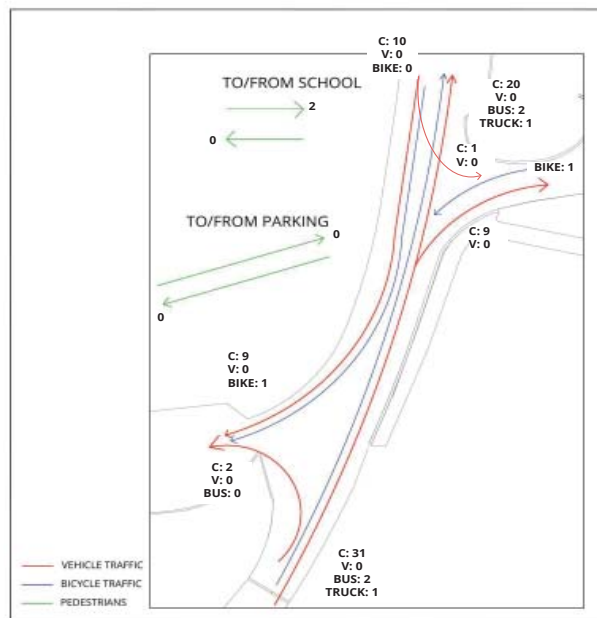


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Lincoln, MA
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3:15 - 3:30 PM
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TRAFFIC MOVEMENTS AT SMITH SCHOOL

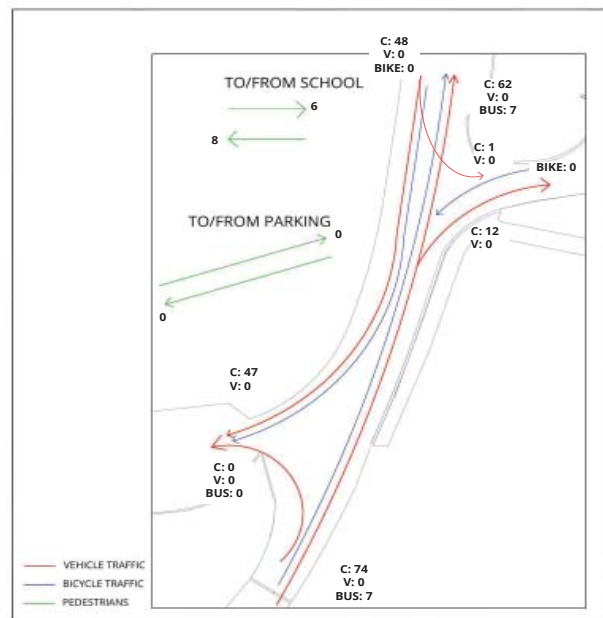


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Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

7:30 - 7:45 AM
 09/24/2015

TRAFFIC MOVEMENTS AT HARTWELL

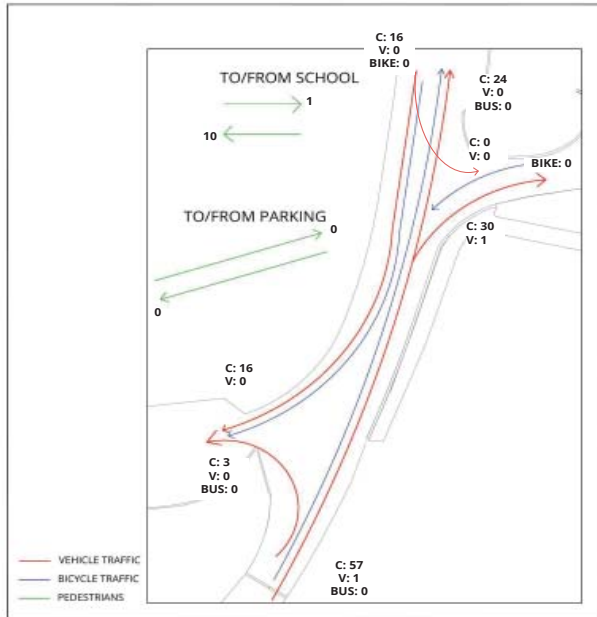


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Lincoln, MA
 Ballfield Road Campus Master Plan
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7:45 - 8:00 AM
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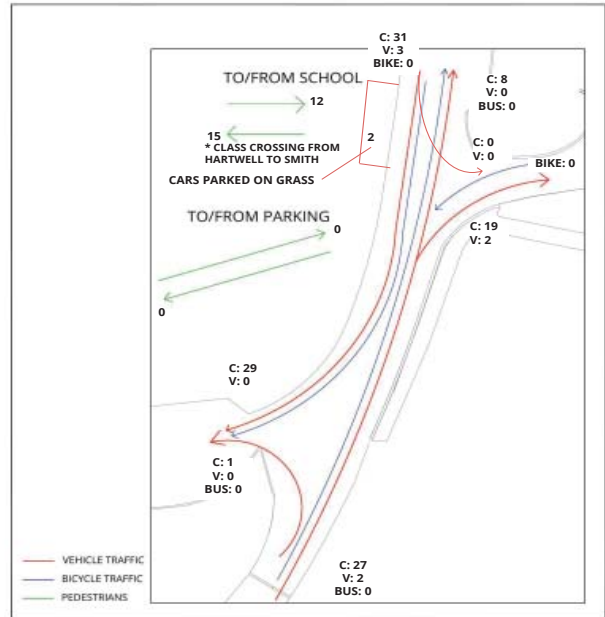


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Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

8:00 - 8:15 AM
 09/24/2015

TRAFFIC MOVEMENTS AT HARTWELL

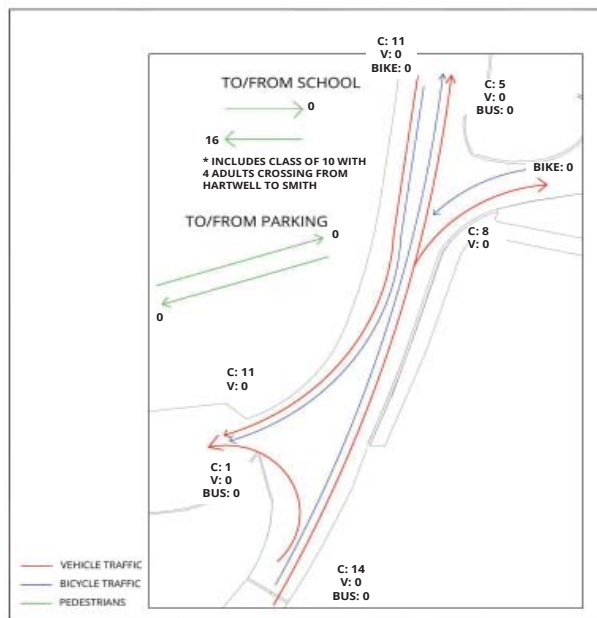


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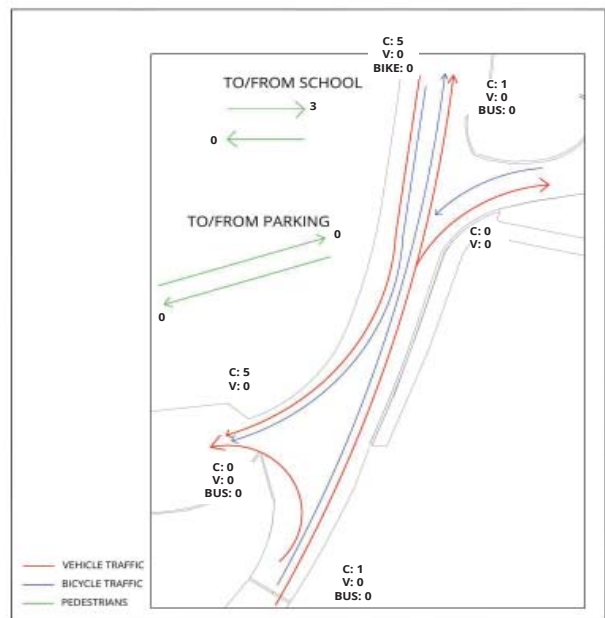


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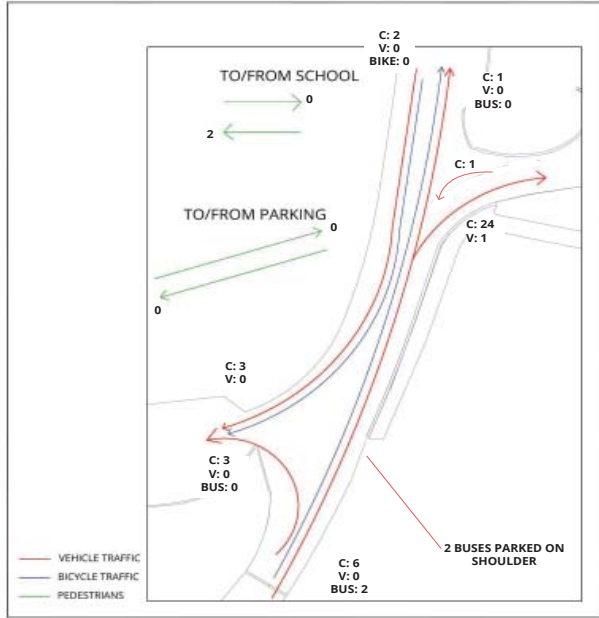


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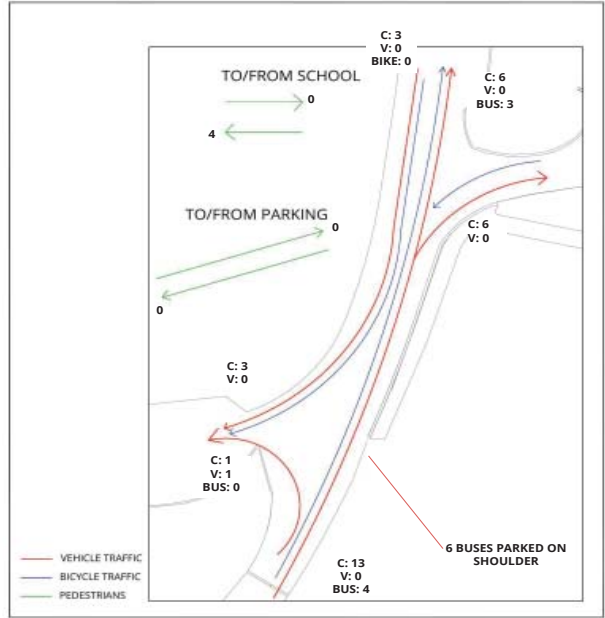
Lincoln, MA
 Ballfield Road Campus Master Plan
 Project Number: 1531

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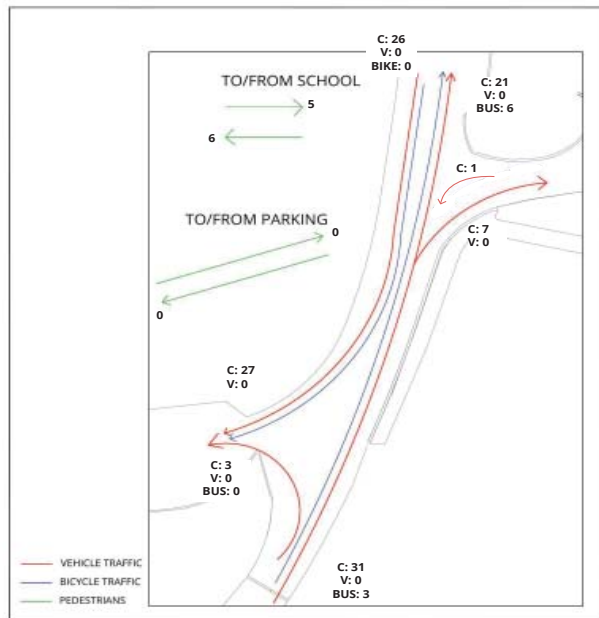
TRAFFIC MOVEMENTS AT HARTWELL



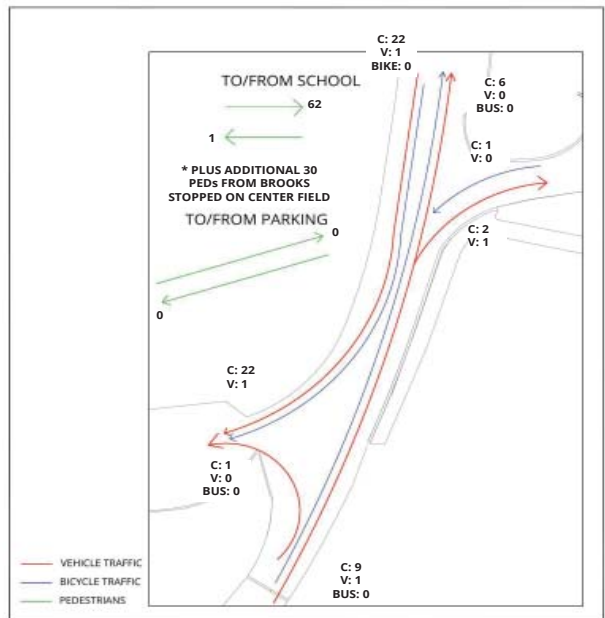
LLB ARCHITECTS
 Lincoln, MA
 Ballfield Road Campus Master Plan
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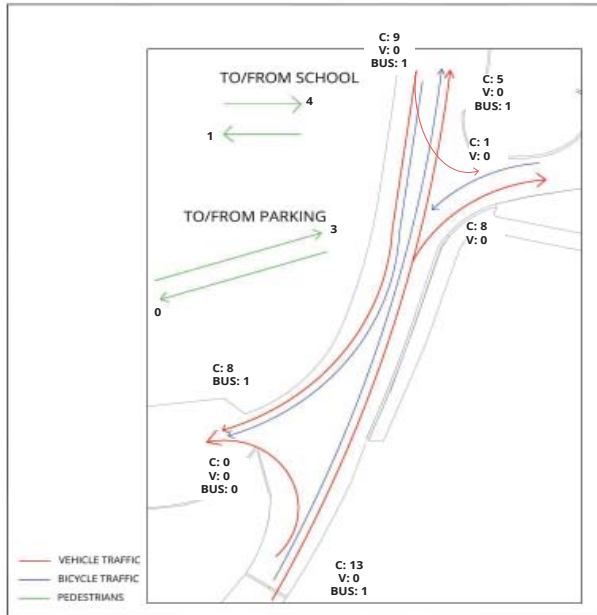
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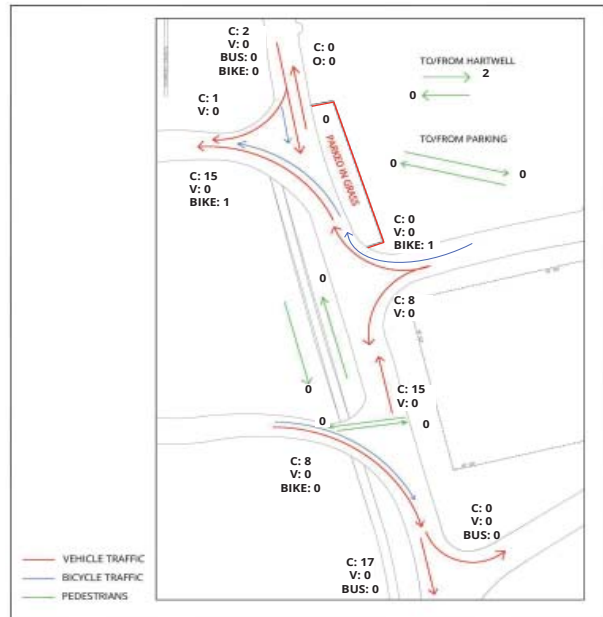
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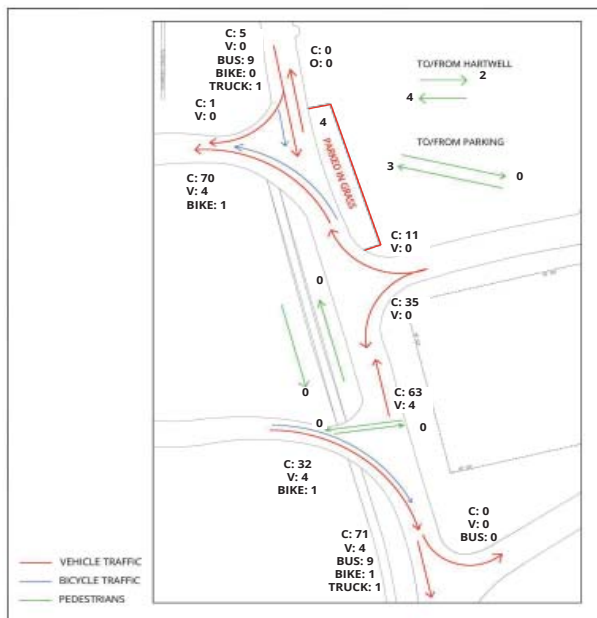
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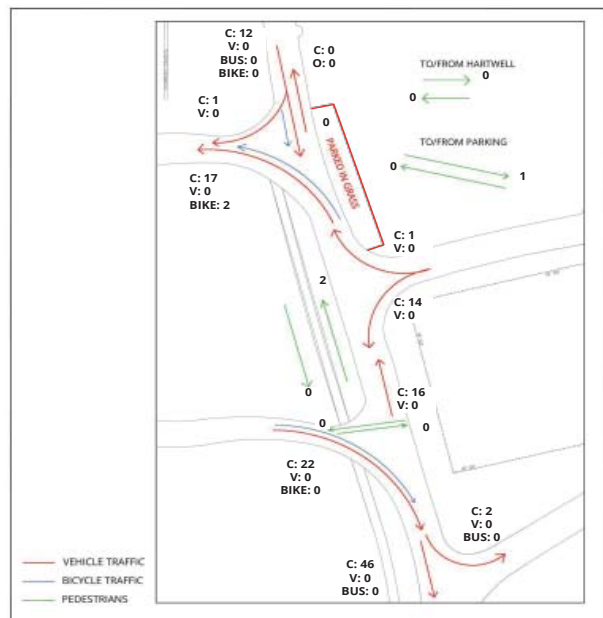
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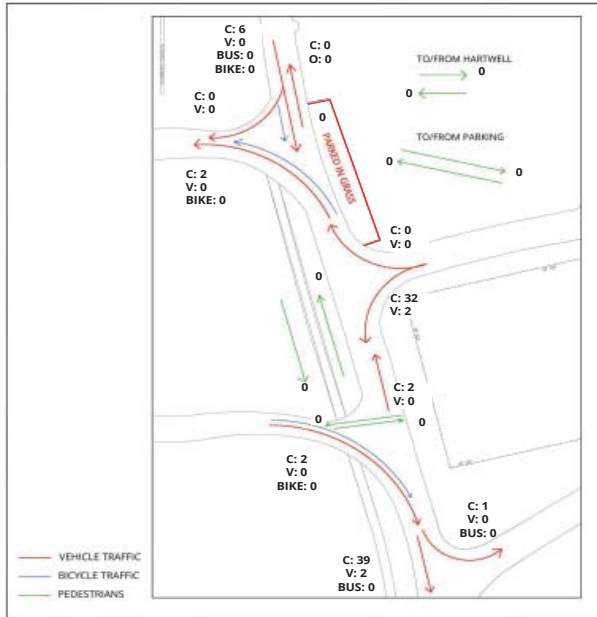
LLB ARCHITECTS
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Ballfield Road Campus Master Plan
Project Number: 1531
7:30 - 7:45 AM
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TRAFFIC MOVEMENTS AT SMITH SCHOOL



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7:45 - 8:00 AM
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TRAFFIC MOVEMENTS AT SMITH SCHOOL



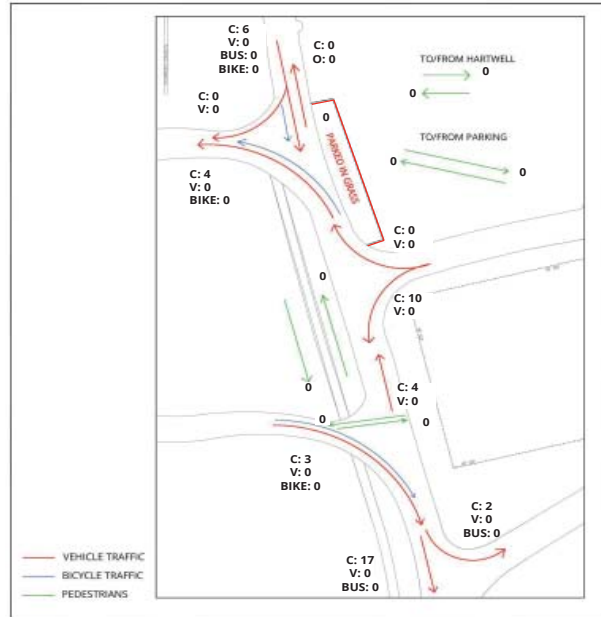
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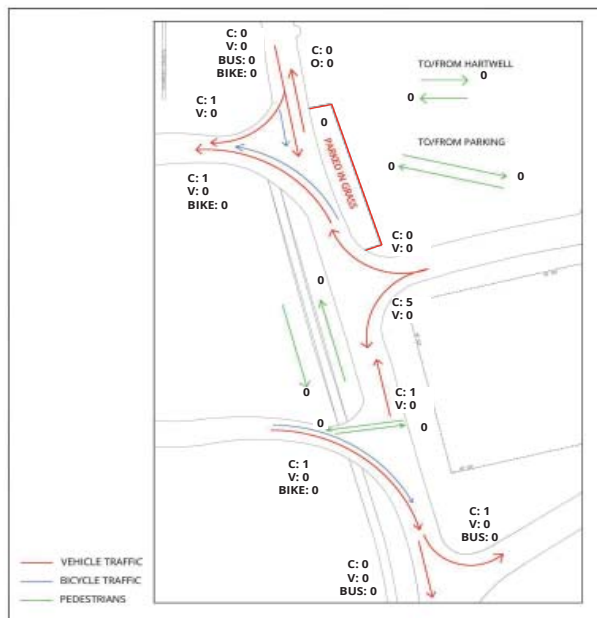
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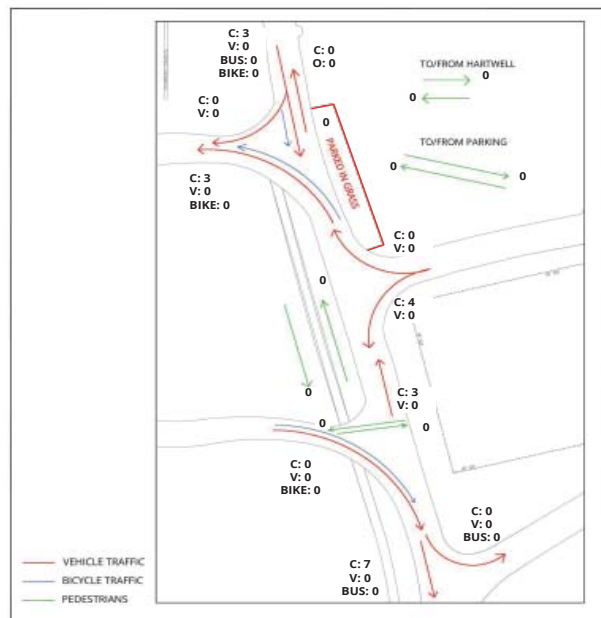
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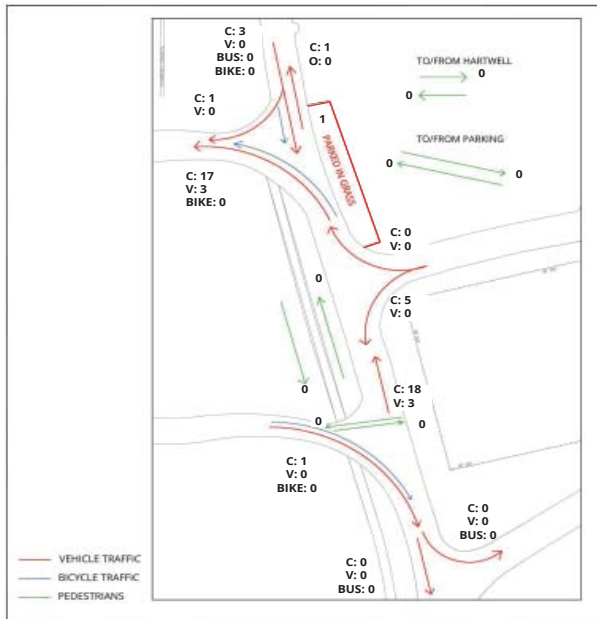
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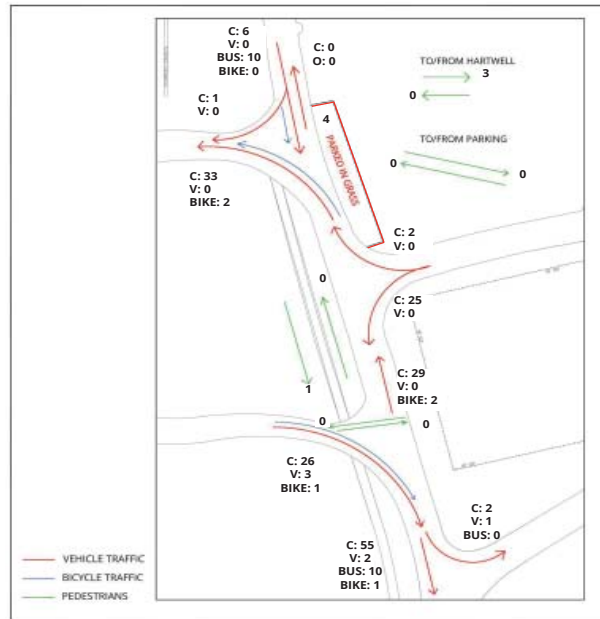
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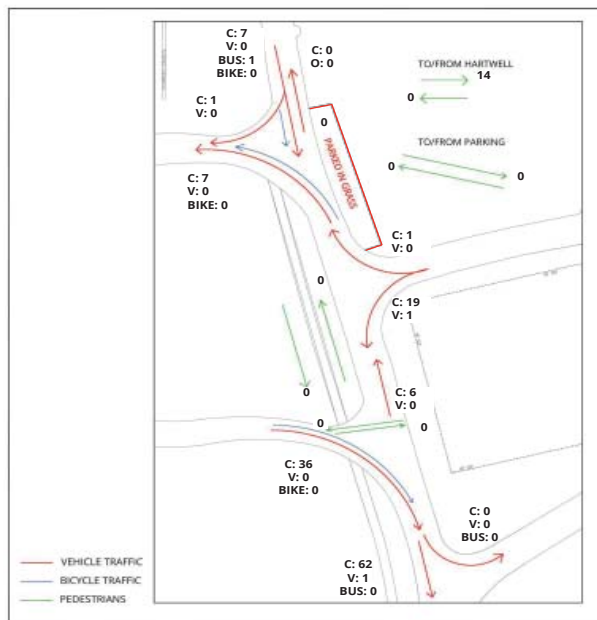
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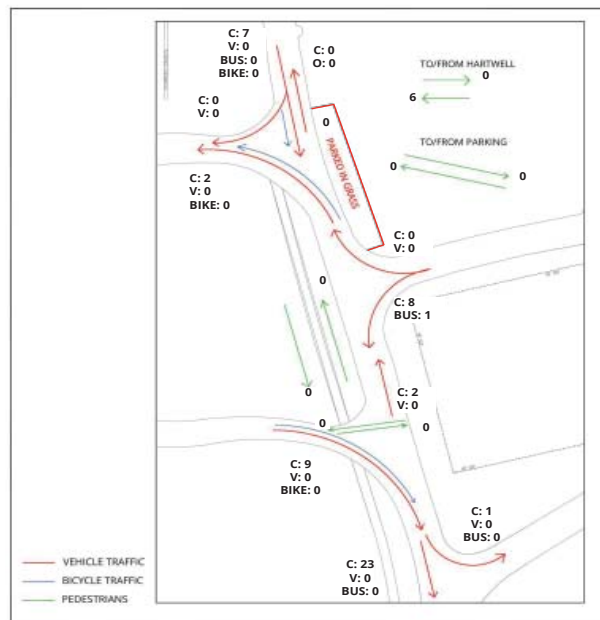
LLB ARCHITECTS
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 3:15 - 3:30 PM
 09/24/2015
TRAFFIC MOVEMENTS AT SMITH SCHOOL

Engineering Materials

Automatic Traffic Recorder (ATR) Data



LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 5
Date Start: 27-Sep-15
Date End: 03-Oct-15
Lincoln Rd at Pierce Hill
Pole 24/30

Table with columns: Start Time, 29-Sep-15 (Tue, North Bou, South Bou), Total. Rows include hourly data from 12:00 AM to 11:45 PM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 6
Date Start: 27-Sep-15
Date End: 03-Oct-15
Lincoln Rd at Pierce Hill
Pole 24/30

Table with columns: Start Time, 29-Sep-15 (Tue, North Bou, South Bou), Total. Rows include hourly data from 12:00 PM to 11:45 PM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 7
Date Start: 27-Sep-15
Date End: 03-Oct-15
Lincoln Rd at Pierce Hill
Pole 24/30

Table with columns: Start Time, 30-Sep-15 (Wed, North Bou, South Bou), Total. Rows include hourly data from 12:00 AM to 11:45 PM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 8
Date Start: 27-Sep-15
Date End: 03-Oct-15
Lincoln Rd at Pierce Hill
Pole 24/30

Table with columns: Start Time, 30-Sep-15 (Wed, North Bou, South Bou), Total. Rows include hourly data from 12:00 PM to 11:45 PM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 10

Date Start: 04-Aug-15
Date End: 10-Aug-15
Lincoln Rd at Pierce Hill
Pole # 24/30

Table with columns: Start Time, 08-Aug-15 Sat, North Boun, South Bou, Total. Rows include time intervals from 12:00 PM to 11:45 AM and summary statistics like Peak, Vol., P.H.F.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 11

Date Start: 04-Aug-15
Date End: 10-Aug-15
Lincoln Rd at Pierce Hill
Pole # 24/30

Table with columns: Start Time, 08-Aug-15 Sun, North Boun, South Bou, Total. Rows include time intervals from 12:00 AM to 11:45 AM and summary statistics like Peak, Vol., P.H.F.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 12

Date Start: 04-Aug-15
Date End: 10-Aug-15
Lincoln Rd at Pierce Hill
Pole # 24/30

Table with columns: Start Time, 09-Aug-15 Sun, North Boun, South Bou, Total. Rows include time intervals from 12:00 PM to 11:45 AM and summary statistics like Peak, Vol., P.H.F.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 13

Date Start: 04-Aug-15
Date End: 10-Aug-15
Lincoln Rd at Pierce Hill
Pole # 24/30

Table with columns: Start Time, 10-Aug-15 Mon, North Boun, South Bou, Total. Rows include time intervals from 12:00 AM to 11:45 AM and summary statistics like Peak, Vol., P.H.F.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
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Page 14

Date Start: 04-Aug-15
Date End: 10-Aug-15
Lincoln Rd at Pierce Hill
Pole # 24/30

Table with columns: Start Time, 10-Aug-15 Mon, North Bound, South Bound, Total. Data includes traffic volume for various times of day, with a peak of 1800 vehicles.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 1

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 04-Aug-15 Tue, East Bound, West Bound, Total. Data includes traffic volume for various times of day, with a peak of 60 vehicles.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 2

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 04-Aug-15 Tue, East Bound, West Bound, Total. Data includes traffic volume for various times of day, with a peak of 208 vehicles.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 3

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 05-Aug-15 Wed, East Bound, West Bound, Total. Data includes traffic volume for various times of day, with a peak of 261 vehicles.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 12

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 09-Aug-15 Sun, East Bound, West Bound, Total. Rows show traffic volume from 12:00 PM to 11:45 AM. Summary statistics at bottom: Total 232, Peak 16:30, Vol. 44, P.H.F. 0.647.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
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Page 13

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 10-Aug-15 Mon, East Bound, West Bound, Total. Rows show traffic volume from 12:00 AM to 11:45 AM. Summary statistics at bottom: Total 240, Peak 08:15, Vol. 69, P.H.F. 0.663.

LINCOLN POLICE DEPARTMENT

169 Lincoln Rd
Lincoln, MA 01773
781-259-8113

Page 14

Date Start: 04-Aug-15
Date End: 10-Aug-15
Ball Field Rd

Table with columns: Start Time, 10-Aug-15 Mon, East Bound, West Bound, Total. Rows show traffic volume from 12:00 PM to 11:45 AM. Summary statistics at bottom: Total 488, Peak 14:30, Vol. 100, P.H.F. 0.735.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 1

Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 27-Sep-15 Sun, Outbound, Inbound, Total. Rows show traffic volume from 12:00 AM to 11:45 AM. Summary statistics at bottom: Total 111, Peak 09:00, Vol. 33, P.H.F. 0.688.

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LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 2
Date Start: 27-Sep-15
Date End: 03-Oct-15
Bailefield Rd

Table with columns: Start Time, 27-Sep-15 Sun, Outbound, Inbound, Total. Rows include time intervals from 12:00 PM to 11:45 AM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 3
Date Start: 27-Sep-15
Date End: 03-Oct-15
Bailefield Rd

Table with columns: Start Time, 28-Sep-15 Mon, Outbound, Inbound, Total. Rows include time intervals from 12:00 AM to 11:45 AM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 4
Date Start: 27-Sep-15
Date End: 03-Oct-15
Bailefield Rd

Table with columns: Start Time, 28-Sep-15 Mon, Outbound, Inbound, Total. Rows include time intervals from 12:00 PM to 11:45 AM, and summary rows for Total, Percent, Peak, Vol., and P.H.F.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 5
Date Start: 27-Sep-15
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LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 6
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 29-Sep-15 Tue, Outbound, Inbound, Total. Shows data for various times from 12:00 PM to 11:45 AM, including peak and P.H.F. values.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 7
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 30-Sep-15 Wed, Outbound, Inbound, Total. Shows data for various times from 12:00 AM to 11:45 AM, including peak and P.H.F. values.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 8
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 30-Sep-15 Wed, Outbound, Inbound, Total. Shows data for various times from 12:00 PM to 11:45 AM, including peak and P.H.F. values.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 9
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 01-Oct-15 Thu, Outbound, Inbound, Total. Shows data for various times from 12:00 AM to 11:45 AM, including peak and P.H.F. values.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 10
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 01-Oct-15, Total. Rows include times from 12:00 PM to 11:45 AM, with a peak at 02:45 and P.H.F. of 0.750.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 11
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 02-Oct-15, Outbound, Inbound, Total. Rows include times from 12:00 AM to 11:45 AM, with a peak at 07:45 and P.H.F. of 0.652.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 12
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 02-Oct-15, Outbound, Inbound, Total. Rows include times from 12:00 PM to 11:45 AM, with a peak at 02:45 and P.H.F. of 0.808.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

Page 13
Date Start: 27-Sep-15
Date End: 03-Oct-15
Ballfield Rd

Table with columns: Start Time, 03-Oct-15, Outbound, Inbound, Total. Rows include times from 12:00 AM to 11:45 AM, with a peak at 10:30 and P.H.F. of 0.507.

LINCOLN POLICE DEPARTMENT
169 LINCOLN RD
LINCOLN, MA 01773

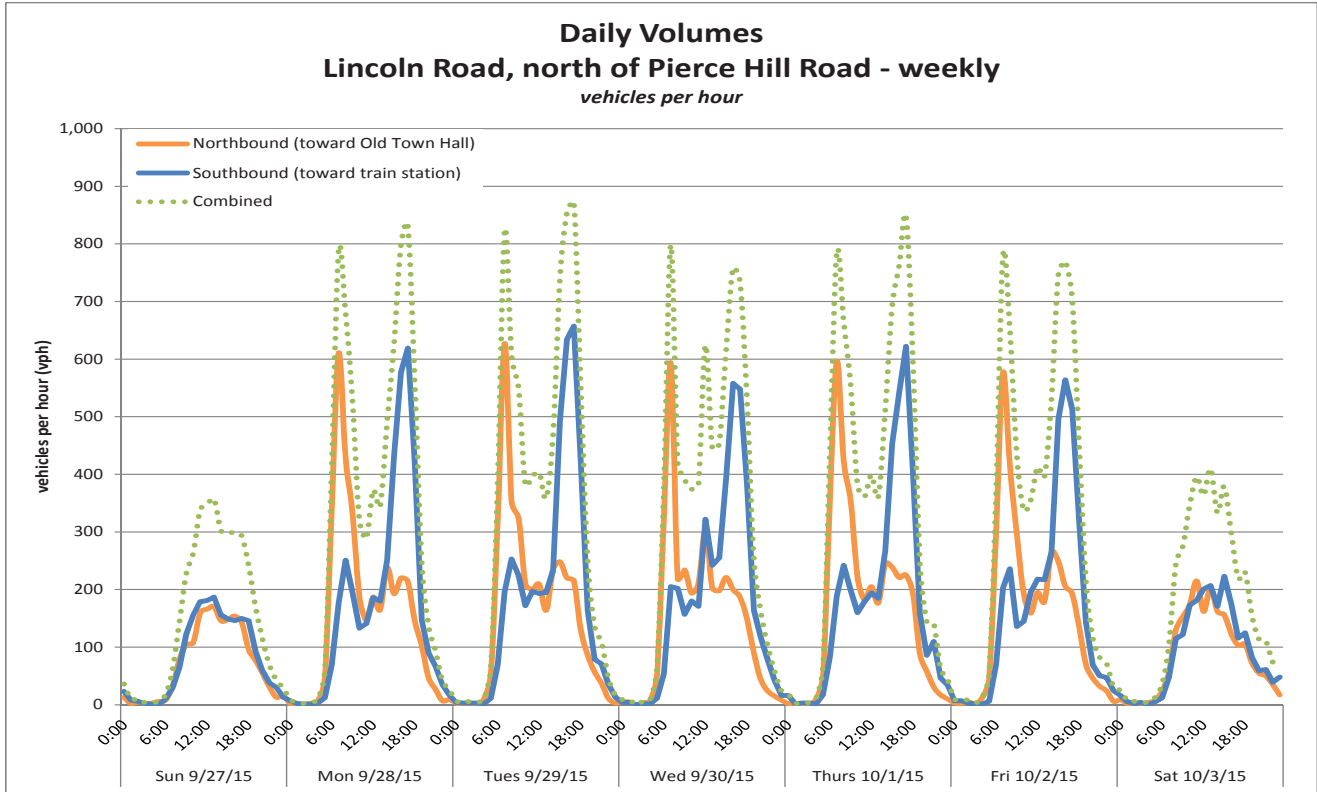
Page 14
 Date Start: 27-Sep-15
 Date End: 03-Oct-15
 Ballfield Rd

Start Time	03-Oct-15 Sat	Outbound	Inbound	Total
12:00 PM	8		16	24
12:15	1		22	23
12:30	4		9	13
12:45	3		9	12
01:00	11		35	46
01:15	30		48	78
01:30	42		34	76
01:45	3		12	15
02:00	7		15	22
02:15	4		8	12
02:30	8		7	15
02:45	32		6	38
03:00	44		7	51
03:15	31		2	33
03:30	4		2	6
03:45	2		5	7
04:00	0		2	2
04:15	3		1	4
04:30	4		3	7
04:45	0		0	0
05:00	0		2	2
05:15	5		1	6
05:30	2		0	2
05:45	1		0	1
06:00	0		0	0
06:15	2		1	3
06:30	0		0	0
06:45	0		0	0
07:00	1		1	2
07:15	4		0	4
07:30	0		0	0
07:45	0		0	0
08:00	0		0	0
08:15	0		0	0
08:30	0		0	0
08:45	0		0	0
09:00	0		0	0
09:15	0		0	0
09:30	0		0	0
09:45	0		0	0
10:00	0		0	0
10:15	0		0	0
10:30	0		0	0
10:45	0		0	0
11:00	0		0	0
11:15	0		0	0
11:30	0		0	0
11:45	0		0	0
Total	256		248	504
Percent	50.8%		49.2%	
Peak	14:30		13:00	13:00
Vol.	115		129	215
P.H.F.	0.653		0.672	0.669
Grand Total	5620		5989	11609
Percent	48.4%		51.6%	
ADT	ADT 1,429		AADT 1,429	

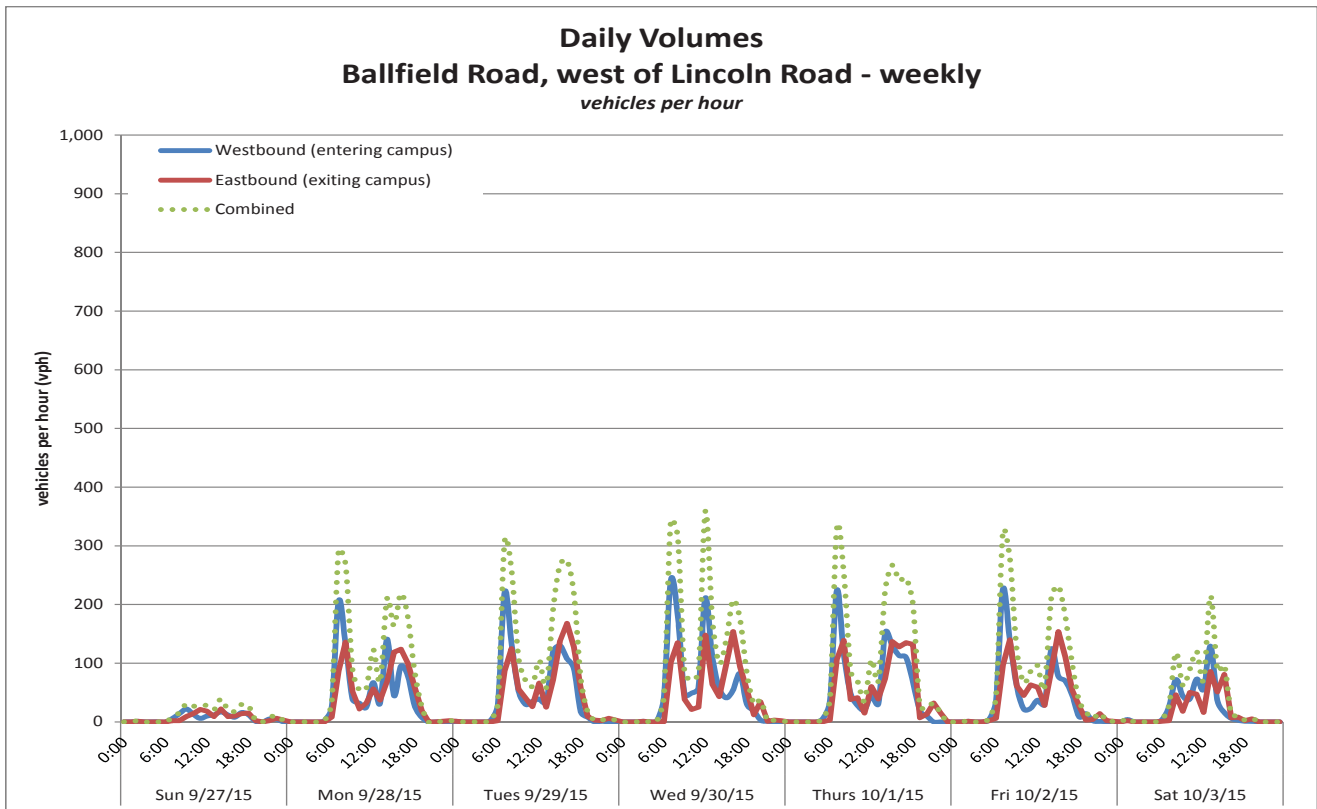
Engineering Materials

Traffic Volumes

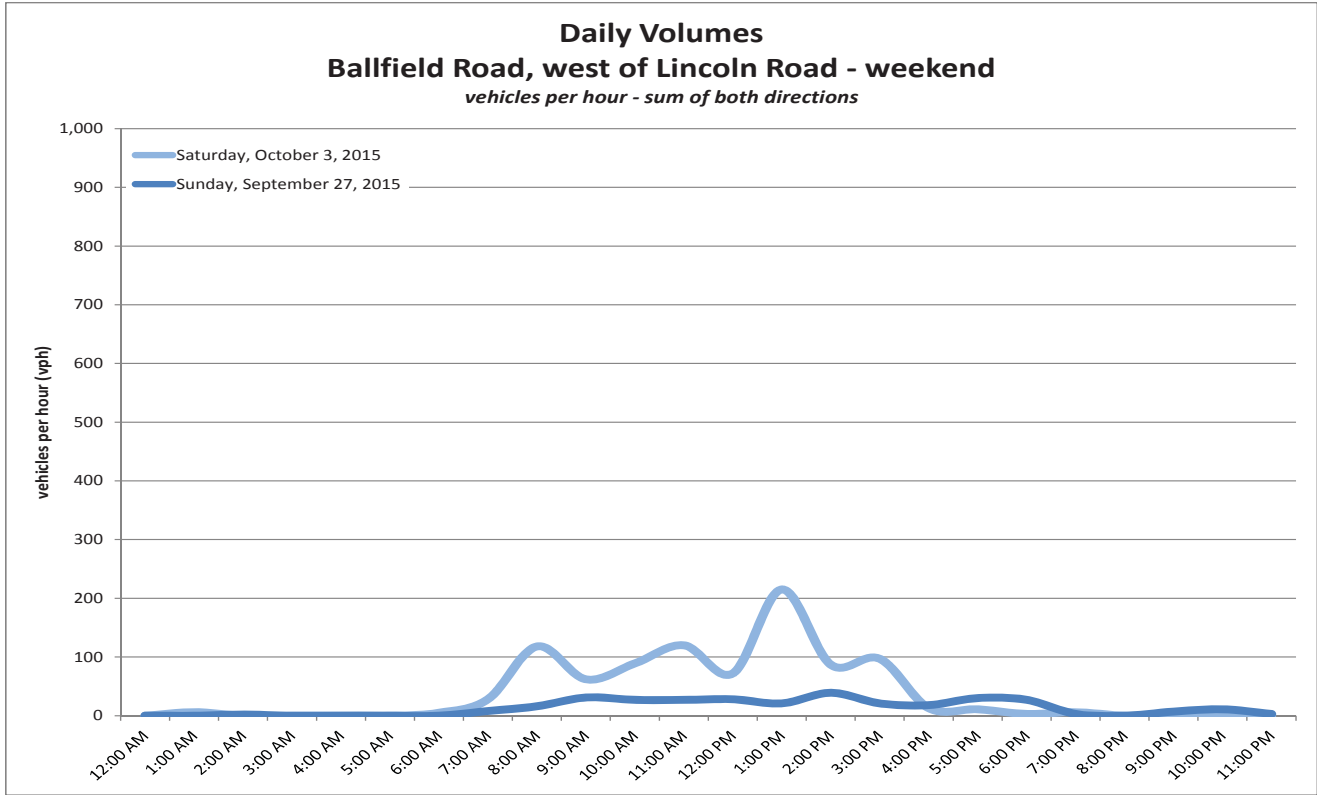




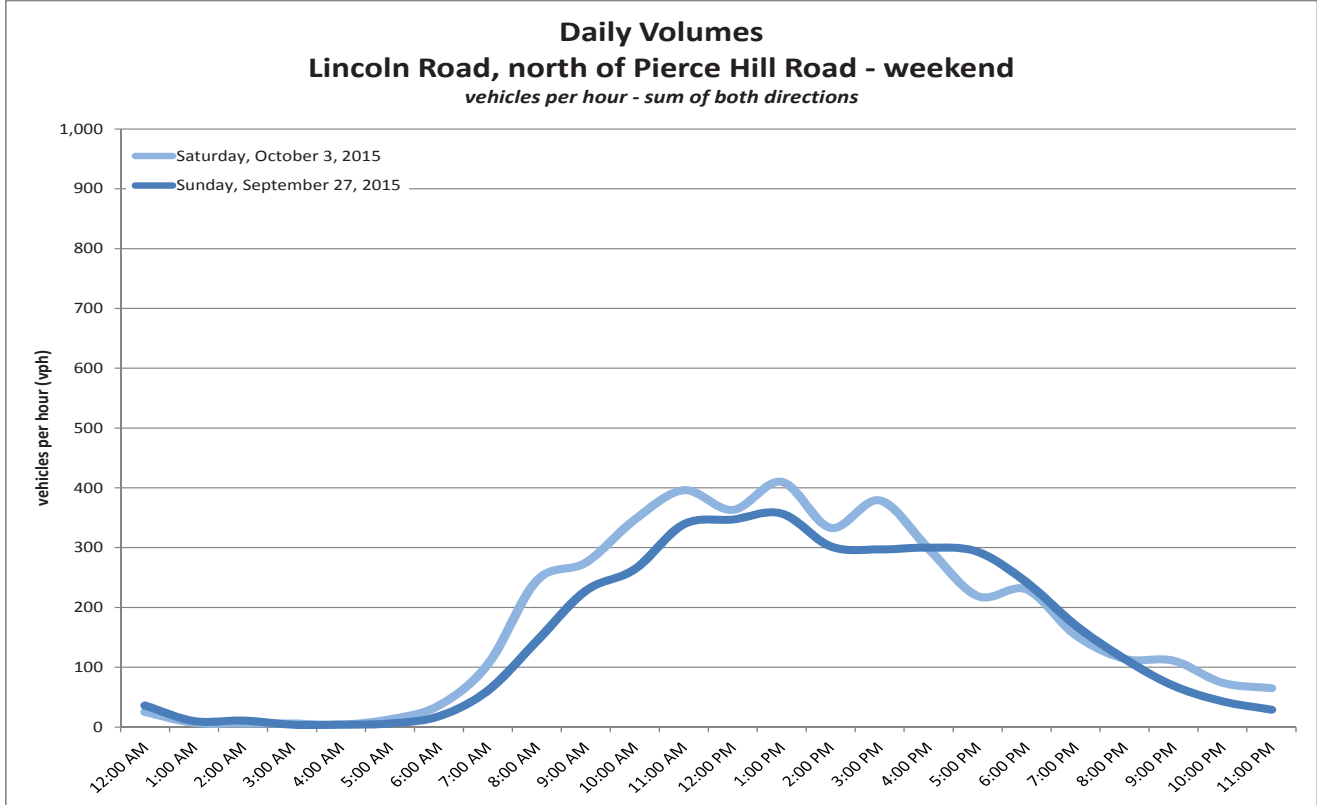
Source: Howard Stein Hudson
9/29/2015



Source: Howard Stein Hudson
9/29/2015



Source: Howard Stein Hudson
9/29/2015



Source: Howard Stein Hudson
9/29/2015

Engineering Materials

Turning movements onto and off of campus



Accurate Counts 978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1

Groups Printed- Cars - Trucks - Buses

Start Time	Lincoln Rd From North		Lincoln Rd From South		Ballfield Rd From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
06:30 AM	16	3	1	83	0	0	103
06:45 AM	30	9	4	125	0	1	169
Total	46	12	5	208	0	1	272
07:00 AM	31	11	4	165	1	2	214
07:15 AM	43	19	18	140	1	2	223
07:30 AM	58	54	31	98	15	5	261
07:45 AM	28	71	60	84	39	34	316
Total	160	155	113	487	56	43	1014
08:00 AM	28	22	16	53	21	27	167
08:15 AM	36	17	16	89	14	16	188
08:30 AM	46	8	3	111	10	12	190
08:45 AM	46	6	5	109	2	7	175
Total	156	53	40	362	47	62	720
Grand Total	362	220	158	1057	103	106	2006
Apprch %	62.2	37.8	13	87	49.3	50.7	
Total %	18	11	7.9	52.7	5.1	5.3	
Cars	357	211	156	1047	101	100	1972
% Cars	98.6	95.9	98.7	99.1	98.1	94.3	98.3
Trucks	2	2	0	5	0	0	9
% Trucks	0.6	0.9	0	0.5	0	0	0.4

Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

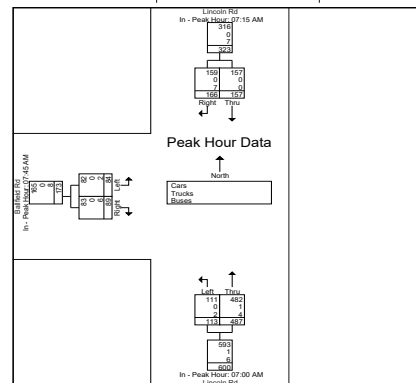
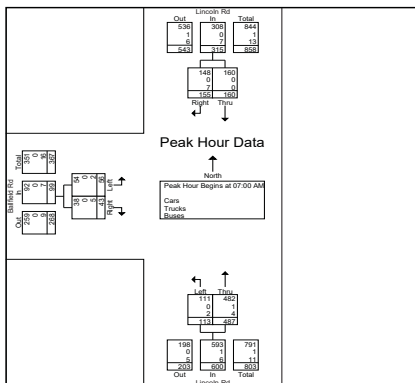
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

Accurate Counts
978-664-2565

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	31	11	42	4	165	169	1	2	3	214
07:15 AM	43	19	62	18	140	158	1	2	3	223
07:30 AM	58	54	112	31	98	129	15	5	20	261
07:45 AM	28	71	99	60	84	144	39	34	73	316
Total Volume	160	155	315	113	487	600	56	43	99	1014
% App. Total	50.8	49.2		18.8	81.2		56.6	43.4		101.4
PHF	.690	.546	.703	.471	.738	.888	.359	.316	.339	.802
Cars	160	148	308	111	482	593	54	36	92	993
% Cars	100	95.5	97.8	98.2	99.0	98.8	96.4	88.4	92.9	97.9
Trucks	0	0	0	0	1	1	0	0	0	1
% Trucks	0	0	0	0	0.2	0.2	0	0	0	0.1
Buses	0	7	7	2	4	6	2	5	7	20
% Buses	0	4.5	2.2	1.8	0.8	1.0	3.6	11.6	7.1	2.0

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Each Approach Begins at:										
07:15 AM	43	19	62	4	165	169	39	34	73	214
+15 mins.	58	54	112	18	140	158	21	27	48	223
+30 mins.	28	71	99	31	98	129	14	16	30	261
+45 mins.	28	22	50	60	84	144	10	12	22	316
Total Volume	157	166	323	113	487	600	84	68	152	1014
% App. Total	48.6	51.4		18.8	81.2		48.6	51.4		101.4
PHF	.677	.585	.721	.471	.738	.888	.538	.654	.592	
Cars	157	159	316	111	482	593	82	83	165	993
% Cars	100	95.8	97.8	98.2	99	98.8	97.6	93.3	95.4	97.9
Trucks	0	0	0	0	1	1	0	0	0	1
% Trucks	0	0	0	0	0.2	0.2	0	0	0	0.1
Buses	0	7	7	2	4	6	2	5	7	20
% Buses	0	4.2	2.2	1.8	0.8	1.0	2.4	6.7	4.6	2.0



Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

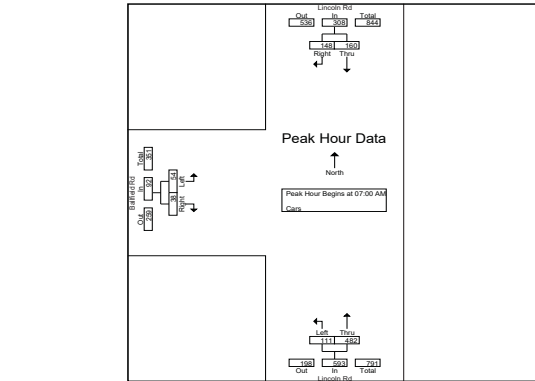
File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

Groups Printed: Cars

Start Time	Lincoln Rd From North		Lincoln Rd From South		Ballfield Rd From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
06:30 AM	16	3	1	82	0	0	102
06:45 AM	29	9	4	124	0	1	167
Total	45	12	5	206	0	1	269
07:00 AM	31	11	4	161	1	2	210
07:15 AM	43	19	18	139	1	2	222
07:30 AM	58	51	29	98	15	5	256
07:45 AM	28	67	60	84	37	29	305
Total	160	148	111	482	54	38	993
08:00 AM	28	22	16	53	21	26	166
08:15 AM	36	17	16	89	14	16	188
08:30 AM	44	7	3	110	10	12	186
08:45 AM	44	5	5	107	2	7	170
Total	152	51	40	359	47	61	710
Grand Total	357	211	156	1047	101	100	1972
Approch %	62.9	37.1	13	87	50.2	49.8	
Total %	18.1	10.7	7.9	53.1	5.1	5.1	

Accurate Counts
978-664-2565

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
06:30 AM	16	3	19	1	82	83	0	0	0	102
06:45 AM	29	9	38	4	124	128	0	1	1	167
Total	45	12	57	5	206	211	0	1	1	269
07:00 AM	31	11	42	4	161	165	1	2	3	210
07:15 AM	43	19	62	18	139	157	1	2	3	222
07:30 AM	58	51	109	29	98	127	15	5	20	256
07:45 AM	28	67	95	60	84	144	37	29	66	305
Total Volume	160	148	308	111	482	593	54	38	92	993
% App. Total	51.9	48.1	100	18.7	81.3	100	58.7	41.3	100	
PHF	.690	.552	.706	.463	.748	.898	.365	.328	.348	.814



Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM	07:00 AM	07:45 AM
+0 mins.	43 19 62	4 161 165	37 29 66
+15 mins.	58 51 109	18 139 157	21 26 47
+30 mins.	28 67 95	29 98 127	14 16 30
+45 mins.	28 22 50	60 84 144	10 12 22
Total Volume	157 159 316	111 482 593	82 83 165
% App. Total	49.7 50.3 100	18.7 81.3 100	49.7 50.3 100
PHF	.677 .593 .725	.463 .748 .898	.554 .716 .825

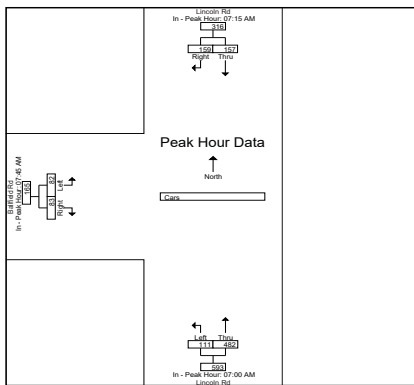
Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1



Accurate Counts
978-664-2565

Groups Printed: Trucks

Start Time	Lincoln Rd From North		Lincoln Rd From South		Ballfield Rd From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
06:30 AM	0	0	0	1	0	0	1
06:45 AM	0	0	0	1	0	0	1
Total	0	0	0	2	0	0	2
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	1	0	0	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	1	0	1	0	0	2
08:45 AM	2	1	0	1	0	0	4
Total	2	2	0	2	0	0	6
Grand Total	2	2	0	5	0	0	9
Approch %	50	50	0	100	0	0	
Total %	22.2	22.2	0	55.6	0	0	

Accurate Counts
978-664-2565

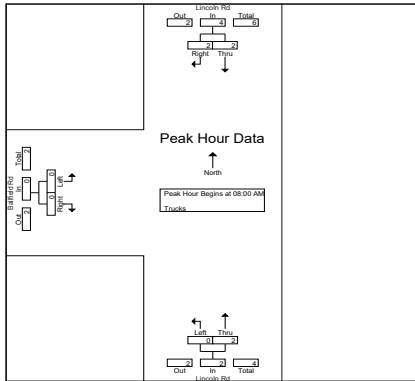
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3

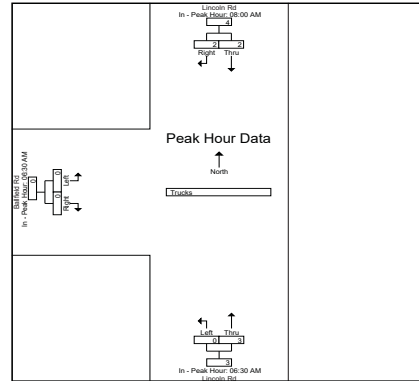
Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:00 AM										
06:00 AM	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	1	1	0	1	1	0	0	0	2
06:45 AM	2	1	3	0	1	1	0	0	0	4
Total Volume	2	2	4	0	2	2	0	0	0	6
% App. Total	50	50	.333	0	100	.500	0	0	0	.375
PHF	.250	.500	.333	.000	.500	.500	.000	.000	.000	.375



Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1

	06:30 AM			06:30 AM			06:30 AM		
	+0 mins.	+15 mins.	+30 mins.	+0 mins.	+15 mins.	+30 mins.	+0 mins.	+15 mins.	+30 mins.
Total Volume	2	2	4	0	3	3	0	0	0
% App. Total	50	50	.333	0	100	.750	0	0	0
PHF	.250	.500	.333	.000	.750	.750	.000	.000	.000

Accurate Counts
978-664-2565



Peak Hour Data

Trucks

Peak Hour Begins at 06:00 AM

Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1

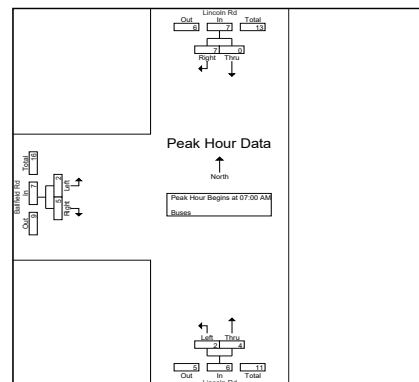
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Groups Printed: Buses										
06:30 AM	0	0	0	0	0	0	0	0	0	0
06:45 AM	1	0	1	0	0	0	0	0	0	1
Total	1	0	1	0	0	0	0	0	0	1
07:00 AM	0	0	0	0	4	4	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	3	3	2	0	0	0	0	0	5
07:45 AM	0	4	4	0	2	2	2	5	7	11
Total	0	7	7	2	4	4	2	5	7	20
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	2	0	2	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	1	1	0	0	0	1
Total	2	0	2	0	1	1	0	1	1	4
Grand Total	3	7	10	2	5	5	2	6	8	25
Approach %	30	70		28.6	71.4		25	75		
Total %	12	28		8	20		8	24		

Accurate Counts
978-664-2565

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	4	4	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	3	3	2	0	2	0	0	0	5
07:45 AM	0	4	4	0	0	0	2	5	7	11
Total Volume	0	7	7	2	4	6	2	5	7	20
% App. Total	0	100	.438	33.3	66.7	.375	28.6	71.4	.455	
PHF	.000	.438	.438	.250	.250	.375	.250	.250	.250	.455



Peak Hour Data

Buses

Peak Hour Begins at 07:00 AM

Peak Hour Analysis From 06:30 AM to 08:45 AM - Peak 1 of 1

	07:00 AM			06:45 AM			07:15 AM		
	+0 mins.	+15 mins.	+30 mins.	+0 mins.	+15 mins.	+30 mins.	+0 mins.	+15 mins.	+30 mins.
Total Volume	0	7	7	2	4	6	2	6	8
% App. Total	0	100	.438	33.3	66.7	.375	25	75	.286
PHF	.000	.438	.438	.250	.250	.375	.250	.300	.286

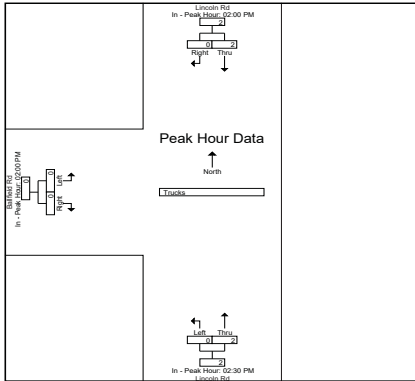
Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1



Accurate Counts
978-664-2565

Start Time	Lincoln Rd From North		Lincoln Rd From South		Ballfield Rd From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
02:00 PM	0	1	0	0	0	0	1
02:15 PM	1	1	0	1	0	0	3
02:30 PM	0	0	7	0	0	0	7
02:45 PM	1	0	0	0	5	3	9
Total	2	2	7	1	5	3	20
03:00 PM	0	0	0	1	1	0	2
03:15 PM	3	0	0	1	0	0	4
03:30 PM	3	0	0	0	0	0	3
03:45 PM	0	0	0	0	0	0	0
Total	6	0	0	2	1	0	9
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	1	0	0	1
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	1	0	0	1
Total	0	0	0	2	0	0	2
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1
Grand Total	9	2	7	5	6	3	32
Approach %	81.8	18.2	58.3	41.7	66.7	33.3	
Total %	28.1	6.2	21.9	15.6	18.8	9.4	

Accurate Counts
978-664-2565

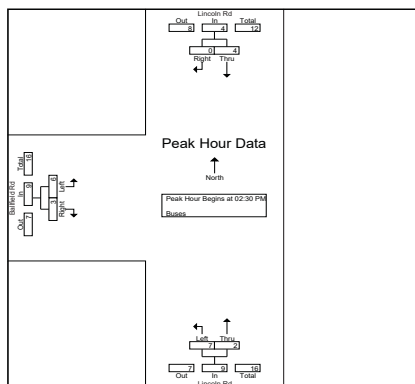
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

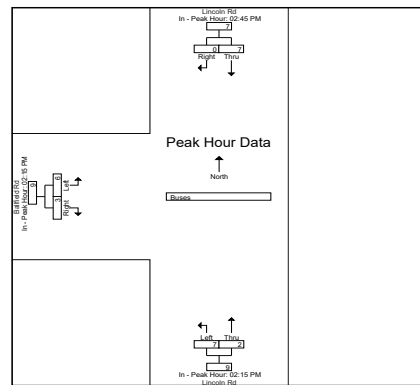
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3

Start Time	Lincoln Rd From North		Lincoln Rd From South		Ballfield Rd From West		Int. Total
	Thru	Right	Left	Thru	Left	Right	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 02:30 PM							
02:30 PM	0	0	0	7	0	7	7
02:45 PM	1	0	1	0	0	5	8
03:00 PM	0	0	0	0	1	1	1
03:15 PM	3	0	3	0	1	1	4
Total Volume	4	0	4	7	2	9	22
% App. Total	100	0	77.8	22.2	66.7	33.3	
PHF	.333	.000	.333	.250	.500	.321	.611



Accurate Counts
978-664-2565



	02:45 PM		02:15 PM		02:15 PM	
	In	Out	In	Out	In	Out
+0 mins.	1	0	1	0	1	0
+15 mins.	0	0	0	7	0	0
+30 mins.	3	0	3	0	0	5
+45 mins.	3	0	3	0	1	0
Total Volume	7	0	7	7	2	5
% App. Total	100	0	77.8	22.2	66.7	33.3
PHF	.583	.000	.583	.250	.321	.281

Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 1

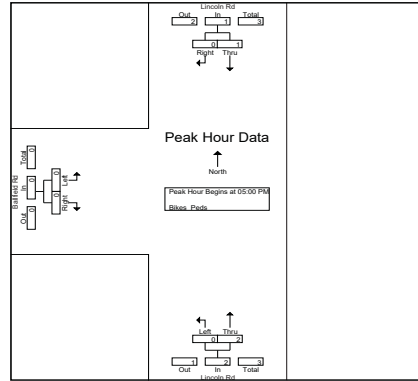
N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 2

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Thru	Right	Peds.	Left	Thru	Peds.	Left	Right	Peds.			
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	
02:15 PM	1	0	0	0	0	0	0	0	0	0	1	
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	
Total	1	0	0	0	0	0	0	0	0	0	1	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	
03:45 PM	0	0	0	1	0	0	0	0	0	0	1	
Total	0	0	0	1	0	0	0	0	0	0	1	
04:00 PM	0	0	0	0	0	0	0	0	1	1	1	
04:15 PM	0	0	0	0	0	0	0	1	0	0	1	
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	
Total	0	0	0	0	0	0	0	1	3	3	1	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	0	0	0	0	0	0	0	0	1	1	0	
05:30 PM	1	0	0	0	0	0	0	0	1	1	2	
05:45 PM	0	0	0	0	2	0	0	0	1	1	2	
Total	1	0	0	0	2	0	0	0	3	3	6	
Grand Total	2	0	0	1	2	0	0	1	6	6	12	
Approach %	100	0	0	33.3	66.7	0	0	100				
Total %	33.3	0	0	16.7	33.3	0	0	16.7				

Accurate Counts
978-664-2565

Start Time	Lincoln Rd From North			Lincoln Rd From South			Ballfield Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total			
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 05:00 PM												
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	
05:30 PM	1	0	1	0	0	0	0	0	0	0	1	
05:45 PM	0	0	0	0	2	2	0	0	0	0	2	
Total Volume	1	0	1	0	2	2	0	0	0	0	3	
% App. Total	100	0	100	0	100	100	0	0	0	0	37.5	
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000	.000	.375	

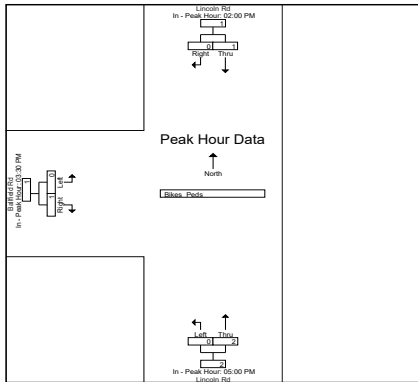


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1												
Peak Hour for Each Approach Begins at:												
	02:00 PM			05:00 PM			03:30 PM			03:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	1	0	1	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	2	2	0	1	1	1	1	
Total Volume	1	0	1	0	2	2	0	1	1	1	1	
% App. Total	100	0	100	0	100	100	0	100	100	100	100	
PHF	.250	.000	.250	.000	.250	.250	.000	.250	.250	.250	.250	

Accurate Counts
978-664-2565

N/S Street : Lincoln Road
E/W Street : Ballfield Road
City/State : Lincoln, MA
Weather : Cloudy

File Name : 15092001
Site Code : 15092001
Start Date : 10/2/2015
Page No : 3



Ballfield Road Queue and Delay Observations

File Name: C:\Users\steve\Documents\2015\PETRA\Lincoln, MA\HSH\15092\AM DELAY.ppd
 Start Date: 10/2/2015
 Start Time: 7:30:00 AM
 Site Code: 15092001
 Comment 1: N/S Street : Lincoln Road
 Comment 2: E/W Street : Ballfield Road
 Comment 3: City/State : Lincoln, MA
 Comment 4: Weather : Cloudy

File Name: C:\Users\steve\Documents\2015\PETRA\Lincoln, MA\HSH\15092\PM DELAY.ppd
 Start Date: 10/5/2015
 Start Time: 2:30:00 PM
 Site Code: 15092001
 Comment 1: N/S Street : Lincoln Road
 Comment 2: E/W Street : Ballfield Road
 Comment 3: City/State : Lincoln, MA
 Comment 4: Weather : Cloudy

Vehicle Number	Joined Queue	Released from Queue	Time in Queue
185	8:27:03 AM	8:27:31 AM	28
186	8:27:08 AM	8:27:36 AM	28
187	8:27:15 AM	8:27:49 AM	34
188	8:27:24 AM	8:27:50 AM	26
189	8:28:21 AM	8:28:38 AM	17
190	8:28:53 AM	8:28:55 AM	2

Vehicle Number	Joined Queue	Released from Queue	Time in Queue
1	2:30:00 PM	2:30:01 PM	1
2	2:31:05 PM	2:31:06 PM	1
3	2:33:34 PM	2:33:35 PM	1
4	2:34:29 PM	2:34:30 PM	1
5	2:35:35 PM	2:35:38 PM	3
6	2:35:57 PM	2:36:06 PM	9
7	2:36:20 PM	2:36:28 PM	8
8	2:40:05 PM	2:40:19 PM	14
9	2:40:30 PM	2:40:30 PM	0
10	2:40:59 PM	2:40:59 PM	0
11	2:42:01 PM	2:42:02 PM	1
12	2:43:25 PM	2:43:41 PM	16
13	2:45:00 PM	2:45:20 PM	20
14	2:45:34 PM	2:45:54 PM	20
15	2:46:08 PM	2:46:08 PM	0
16	2:48:25 PM	2:48:36 PM	11
17	2:49:23 PM	2:49:27 PM	4
18	2:50:56 PM	2:50:56 PM	0
19	2:51:31 PM	2:51:39 PM	8
20	2:52:07 PM	2:52:08 PM	1
21	2:52:24 PM	2:52:32 PM	8
22	2:53:18 PM	2:53:22 PM	4
23	2:53:58 PM	2:53:58 PM	0
24	2:54:10 PM	2:54:14 PM	4
25	2:54:50 PM	2:55:12 PM	22
26	2:54:54 PM	2:55:28 PM	34
27	2:54:57 PM	2:55:32 PM	35
28	2:55:07 PM	2:55:45 PM	38
29	2:55:09 PM	2:55:50 PM	41
30	2:55:12 PM	2:55:58 PM	46
31	2:55:14 PM	2:56:02 PM	48
32	2:55:18 PM	2:56:04 PM	46
33	2:55:22 PM	2:56:17 PM	55
34	2:55:27 PM	2:56:31 PM	64
35	2:55:33 PM	2:56:57 PM	84
36	2:56:06 PM	2:57:10 PM	64
37	2:56:07 PM	2:57:19 PM	72
38	2:56:12 PM	2:57:24 PM	72
39	2:56:29 PM	2:57:29 PM	60
40	2:56:31 PM	2:57:33 PM	62
41	2:56:34 PM	2:57:45 PM	71
42	2:56:40 PM	2:58:00 PM	80
43	2:56:44 PM	2:58:06 PM	82
44	2:56:48 PM	2:58:19 PM	91
45	2:56:52 PM	2:58:21 PM	89
46	2:56:58 PM	2:58:28 PM	90

File Name: C:\Users\steve\Documents\2015\PETRA\Lincoln, MA\HSH\15092\PM DELAY.ppd
 Start Date: 10/5/2015
 Start Time: 2:30:00 PM
 Site Code: 15092001
 Comment 1: N/S Street : Lincoln Road
 Comment 2: E/W Street : Ballfield Road
 Comment 3: City/State : Lincoln, MA
 Comment 4: Weather : Cloudy

Vehicle Number	Joined Queue	Released from Queue	Time in Queue
47	2:57:00 PM	2:58:52 PM	112
48	2:57:03 PM	2:58:54 PM	111
49	2:57:07 PM	2:58:55 PM	108
50	2:57:13 PM	2:58:58 PM	105
51	2:57:26 PM	2:59:02 PM	96
52	2:57:48 PM	2:59:03 PM	75
53	2:58:00 PM	2:59:08 PM	68
54	2:58:07 PM	2:59:21 PM	74
55	2:58:09 PM	2:59:24 PM	75
56	2:58:15 PM	2:59:34 PM	79
57	2:58:19 PM	2:59:43 PM	84
58	2:58:26 PM	3:00:15 PM	109
59	2:58:32 PM	3:00:21 PM	109
60	2:58:43 PM	3:00:24 PM	101
61	2:58:48 PM	3:00:34 PM	106
62	2:59:02 PM	3:00:52 PM	110
63	2:59:34 PM	3:01:02 PM	88
64	2:59:38 PM	3:01:04 PM	86
65	2:59:42 PM	3:01:08 PM	86
66	2:59:54 PM	3:01:14 PM	80
67	2:59:57 PM	3:01:26 PM	89
68	3:00:00 PM	3:01:39 PM	99
69	3:00:06 PM	3:01:47 PM	101
70	3:00:13 PM	3:01:50 PM	97
71	3:00:20 PM	3:01:51 PM	91
72	3:00:25 PM	3:02:04 PM	99
73	3:00:26 PM	3:02:11 PM	105
74	3:00:28 PM	3:02:14 PM	106
75	3:00:29 PM	3:02:22 PM	113
76	3:00:31 PM	3:02:27 PM	116
77	3:00:33 PM	3:02:36 PM	123
78	3:00:34 PM	3:02:45 PM	131
79	3:00:36 PM	3:02:50 PM	134
80	3:00:37 PM	3:03:01 PM	144
81	3:00:39 PM	3:03:11 PM	152
82	3:00:40 PM	3:03:18 PM	158
83	3:00:42 PM	3:03:25 PM	163
84	3:00:43 PM	3:03:54 PM	191
85	3:00:45 PM	3:04:14 PM	209
86	3:01:44 PM	3:04:18 PM	154
87	3:01:46 PM	3:04:24 PM	158
88	3:01:49 PM	3:04:24 PM	155
89	3:02:00 PM	3:04:36 PM	156
90	3:02:02 PM	3:04:38 PM	156
91	3:02:26 PM	3:04:42 PM	136
92	3:02:33 PM	3:04:46 PM	133

File Name: C:\Users\steve\Documents\2015\PETRA\Lincoln, MA\HSH\15092\PM DELAY.ppd
 Start Date: 10/5/2015
 Start Time: 2:30:00 PM
 Site Code: 15092001
 Comment 1: N/S Street : Lincoln Road
 Comment 2: E/W Street : Ballfield Road
 Comment 3: City/State : Lincoln, MA
 Comment 4: Weather : Cloudy

Vehicle Number	Joined Queue	Released from Queue	Time in Queue
93	3:02:43 PM	3:04:56 PM	133
94	3:02:44 PM	3:05:00 PM	136
95	3:02:51 PM	3:05:04 PM	133
96	3:03:02 PM	3:05:07 PM	125
97	3:03:04 PM	3:05:21 PM	137
98	3:03:48 PM	3:05:24 PM	96
99	3:03:50 PM	3:05:31 PM	101
100	3:04:07 PM	3:05:34 PM	87
101	3:04:08 PM	3:05:45 PM	97
102	3:04:20 PM	3:05:49 PM	89
103	3:04:34 PM	3:05:51 PM	77
104	3:04:36 PM	3:05:51 PM	75
105	3:04:49 PM	3:05:52 PM	63
106	3:04:51 PM	3:05:53 PM	62
107	3:04:53 PM	3:05:55 PM	62
108	3:04:55 PM	3:05:59 PM	64
109	3:04:58 PM	3:06:13 PM	75
110	3:04:59 PM	3:06:18 PM	79
111	3:05:15 PM	3:06:23 PM	68
112	3:05:29 PM	3:06:26 PM	57
113	3:05:37 PM	3:07:09 PM	92
114	3:05:40 PM	3:07:14 PM	94
115	3:05:42 PM	3:07:18 PM	96
116	3:06:04 PM	3:07:22 PM	78
117	3:06:28 PM	3:07:30 PM	62
118	3:06:40 PM	3:07:46 PM	66
119	3:06:43 PM	3:07:51 PM	68
120	3:06:55 PM	3:07:58 PM	63
121	3:07:18 PM	3:08:01 PM	43
122	3:07:26 PM	3:08:06 PM	40
123	3:07:37 PM	3:08:10 PM	33
124	3:08:11 PM	3:08:14 PM	3
125	3:08:12 PM	3:08:23 PM	11
126	3:08:15 PM	3:08:31 PM	16
127	3:08:16 PM	3:08:34 PM	18
128	3:08:18 PM	3:08:40 PM	22
129	3:08:22 PM	3:08:53 PM	31
130	3:10:06 PM	3:10:09 PM	3
131	3:10:24 PM	3:10:31 PM	7
132	3:10:29 PM	3:10:35 PM	6
133	3:10:57 PM	3:11:06 PM	9
134	3:11:26 PM	3:11:35 PM	9
135	3:11:28 PM	3:11:36 PM	8
136	3:11:31 PM	3:11:41 PM	10
137	3:12:01 PM	3:12:03 PM	2
138	3:13:08 PM	3:13:14 PM	6

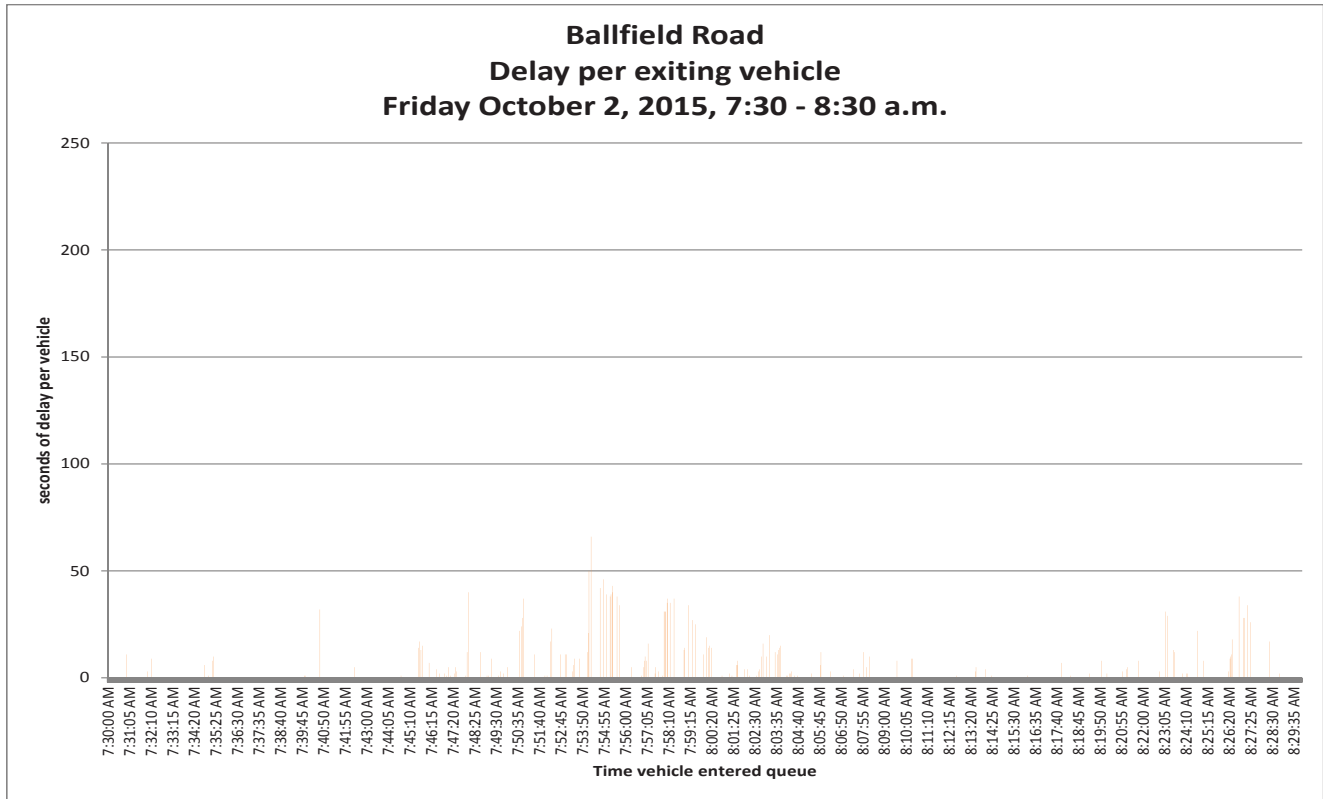
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 Start Date: 10/5/2015
 Start Time: 2:30:00 PM
 Site Code: 15092001
 Comment 1: N/S Street : Lincoln Road
 Comment 2: E/W Street : Bullfield Road
 Comment 3: City/State : Lincoln, MA
 Comment 4: Weather : Cloudy

Vehicle Number	Joined Queue	Released from Queue	Time in Queue
139	3:13:18 PM	3:13:19 PM	1
140	3:13:25 PM	3:13:35 PM	10
141	3:13:48 PM	3:13:50 PM	2
142	3:14:03 PM	3:14:24 PM	21
143	3:14:40 PM	3:14:41 PM	1
144	3:14:46 PM	3:14:46 PM	0
145	3:14:55 PM	3:15:02 PM	7
146	3:15:12 PM	3:15:18 PM	6
147	3:16:06 PM	3:16:14 PM	8
148	3:16:21 PM	3:16:23 PM	2
149	3:16:28 PM	3:16:29 PM	1
150	3:17:26 PM	3:17:31 PM	5
151	3:17:59 PM	3:17:59 PM	0
152	3:18:05 PM	3:18:11 PM	6
153	3:18:14 PM	3:18:24 PM	10
154	3:19:14 PM	3:19:18 PM	4
155	3:19:26 PM	3:19:27 PM	1
156	3:19:53 PM	3:19:53 PM	0
157	3:19:58 PM	3:19:58 PM	0
158	3:20:44 PM	3:20:45 PM	1
159	3:20:56 PM	3:21:02 PM	6
160	3:21:28 PM	3:21:38 PM	10
161	3:21:37 PM	3:21:39 PM	2
162	3:21:42 PM	3:21:44 PM	2
163	3:21:46 PM	3:21:47 PM	1
164	3:21:51 PM	3:21:55 PM	4
165	3:21:53 PM	3:21:57 PM	4
166	3:22:15 PM	3:22:18 PM	3
167	3:22:23 PM	3:22:41 PM	18
168	3:23:42 PM	3:23:51 PM	9
169	3:23:56 PM	3:24:12 PM	16
170	3:24:09 PM	3:24:14 PM	5
171	3:24:28 PM	3:24:31 PM	3
172	3:26:38 PM	3:26:41 PM	3
173	3:28:13 PM	3:28:45 PM	32
174	3:28:15 PM	3:28:47 PM	32

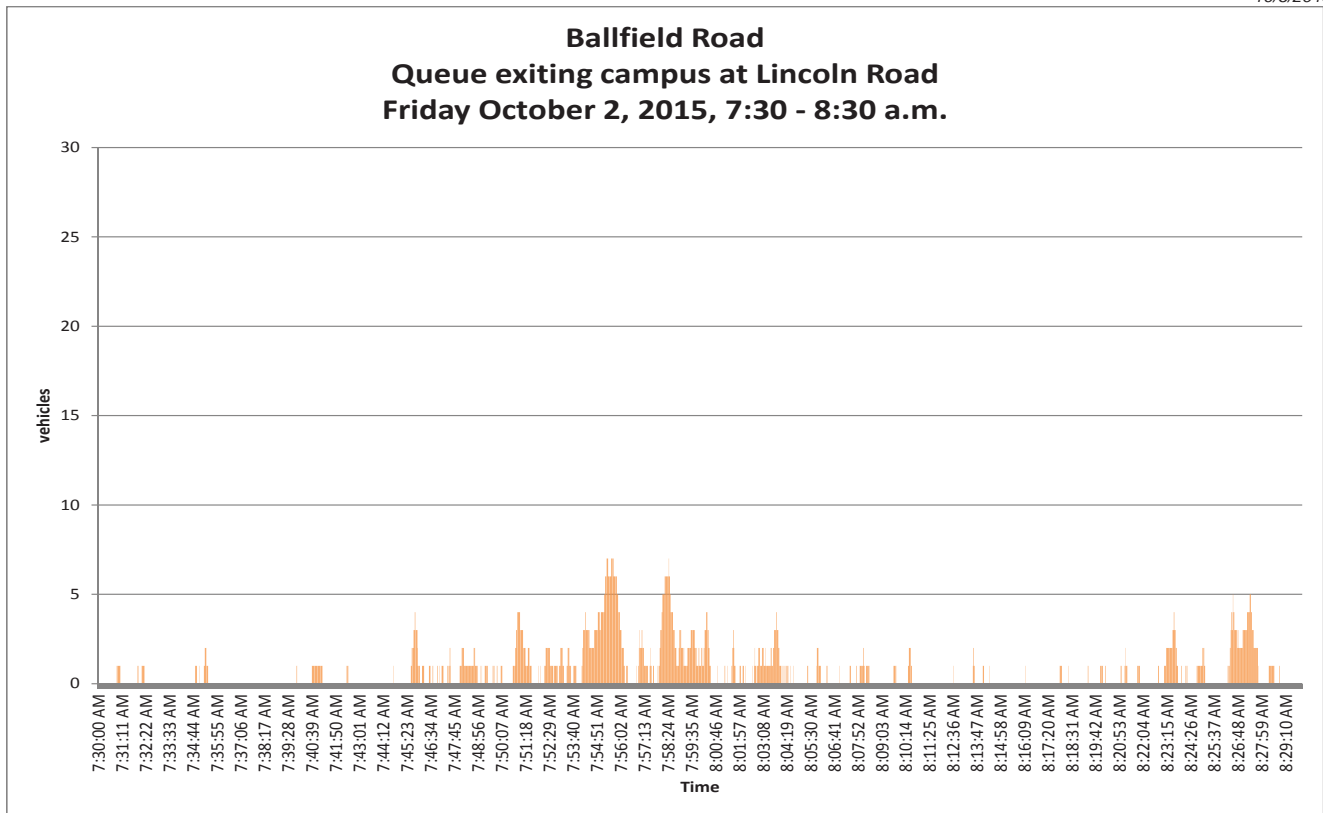
Engineering Materials

Vehicle queueing

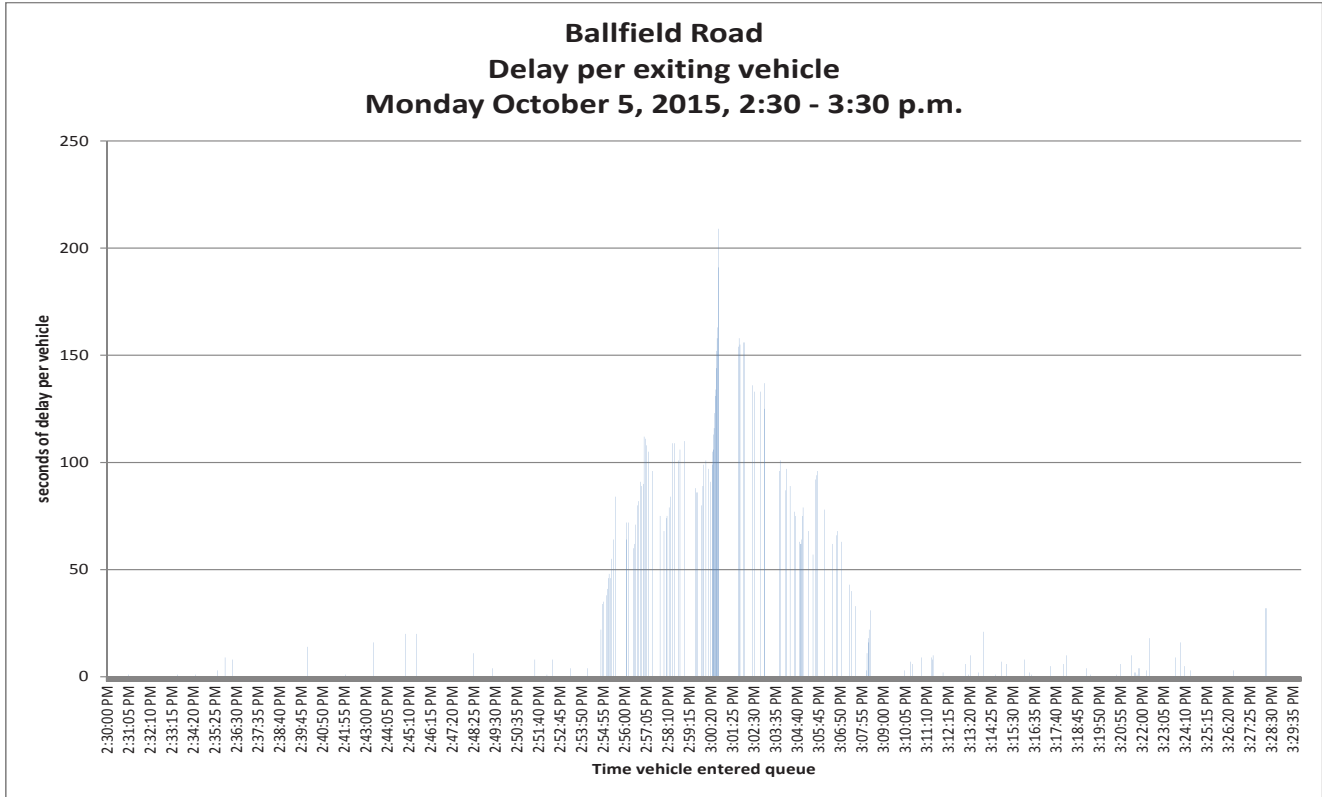




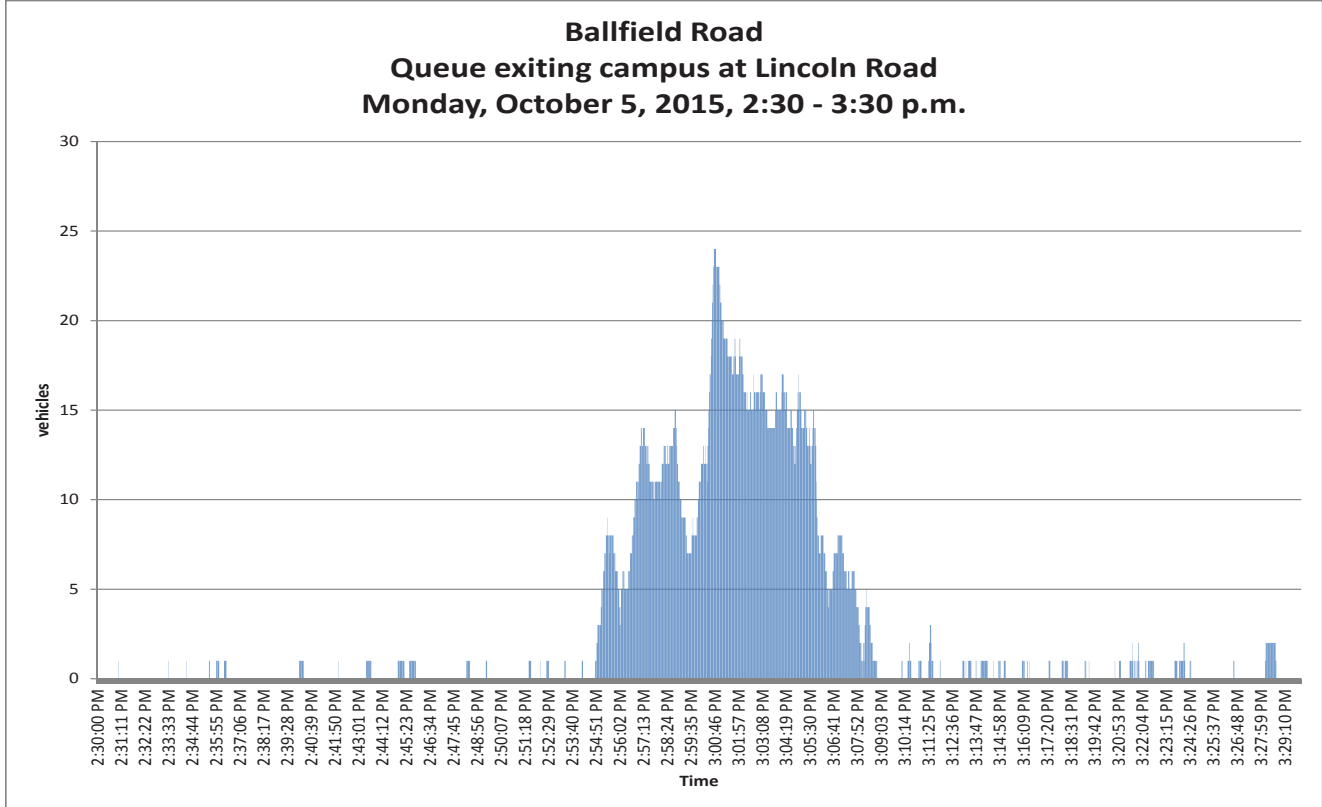
Source: Howard Stein Hudson
10/6/2015



Source: Howard Stein Hudson
10/6/2015



Source: Howard Stein Hudson
10/6/2015



Source: Howard Stein Hudson
10/6/2015

Engineering Materials

Sight distance evaluation



Sight Distance Analysis Summary – Based on 85th percentile speed of 40 mph

	Stopping Sight Distance (SSD) for Lincoln Street traffic		Intersection Sight Distance (ISD) for exiting Ballfield Road traffic			
	Travelling	Minimum required (feet) ¹⁾	Measured (feet)	Looking	Minimum required (feet) ¹⁾	Measured (feet)
Lincoln Street at Ballfield Road	Northbound	250	Over 500	Left	385	Over 500
	Southbound	250	Over 500	Right	385	Over 500

¹ “A Policy on Geometric Design of Highways and Streets”, American Association of State Highway and Transportation Officials (AASHTO) 6th Edition, 2011










Note that the table presents the minimum stopping distance for SSD and ISD at 40 mph, which most closely represents the actual 85th percentile speeds on Lincoln Road travel speeds of 38 mph. At slower speeds, the required minimum distances would be less.

Engineering Materials










Intersection capacity analysis












HCM Unsignalized Intersection Capacity Analysis 2: Lincoln Road & Ballfield Road

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	56	43	113	487	155	160
Future Volume (Veh/h)	56	43	113	487	155	160
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.34	0.34	0.89	0.89	0.70	0.70
Hourly flow rate (vph)	165	126	127	547	221	229
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1136	336	450			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1136	336	450			
tC, single (s)	*4.8	*4.7	4.1			
tC, 2 stage (s)						
tF (s)	*2.6	*2.5	2.2			
p0 queue free %	58	88	89			
cM capacity (veh/h)	395	1042	1110			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	291	674	450			

HCM Unsignalized Intersection Capacity Analysis 2: Lincoln Rd/ Lincoln Rd & Ballfield Rd

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	74	36	177	333	49
Future Volume (Veh/h)	110	74	36	177	333	49
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.41	0.41	0.76	0.76	0.80	0.80
Hourly flow rate (vph)	268	180	47	233	416	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	774	446	477			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	774	446	477			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	24	71	96			
cM capacity (veh/h)	351	612	1085			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	448	280	477			

HCM Unsignalized Intersection Capacity Analysis 2: Lincoln Rd & Ballfield Road

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	41	22	187	565	46
Future Volume (Veh/h)	47	41	22	187	565	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.83	0.83	0.93	0.93
Hourly flow rate (vph)	53	47	27	225	608	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	912	632	657			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	912	632	657			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	90	97			
cM capacity (veh/h)	295	480	931			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	100	252	657			

Engineering Materials

Projected traffic volumes onto and off of campus



