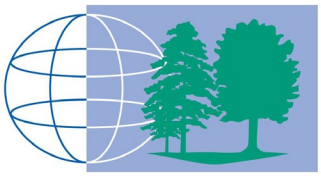
Wayland, Kentucky Community Park

Prepared for the Town of Wayland, Kentucky

December 2012

community design assistance center

College of Architecture and Urban Studies
Virginia Polytechnic Institute and State University



SOUTHERN GROUP
OF STATE FORESTERS

Project funded by the U.S. Forest Service in cooperation with the Kentucky Division of Forestry

Project Team

Community Design Assistance Center

Elizabeth Gilboy	Director
Lara Browning	Landscape Architecture Project Coordinator
Brad Davis	Undergraduate Student, Landscape Architecture
Harley Walker	Undergraduate Student, Landscape Architecture

In collaboration with the Kentucky Division of Forestry the extended team includes:

Sarah Gracey	Urban Forestry Coordinator

Acknowledgements

Jerry Fultz	Mayor, Wayland
Regina McClure	Big Sandy Area Development District
Denise Thomas	Big Sandy Area Development District
Sandra Turner	Executive Director, Wayland Historical Society
Terri Howell	Wayland City Commission
Angela MacElhose	Wayland City Commission
Kathy Mills	Wayland City Commission
Linda Spurlock	Wayland City Commission
RD "Doc" Marshall	Floyd County Judge Executive

Wayland Historical Society

Floyd County Fiscal Court

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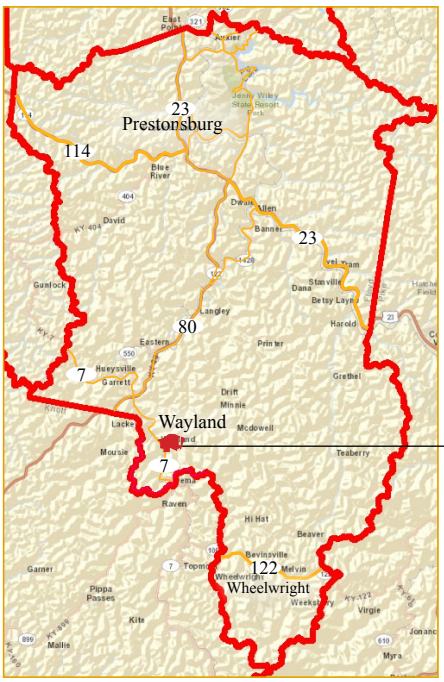
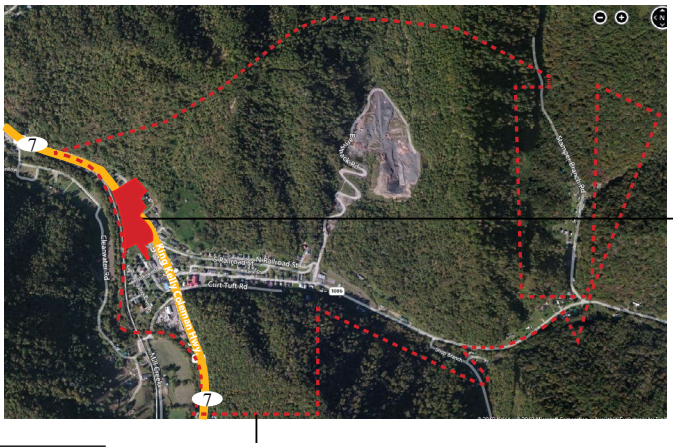
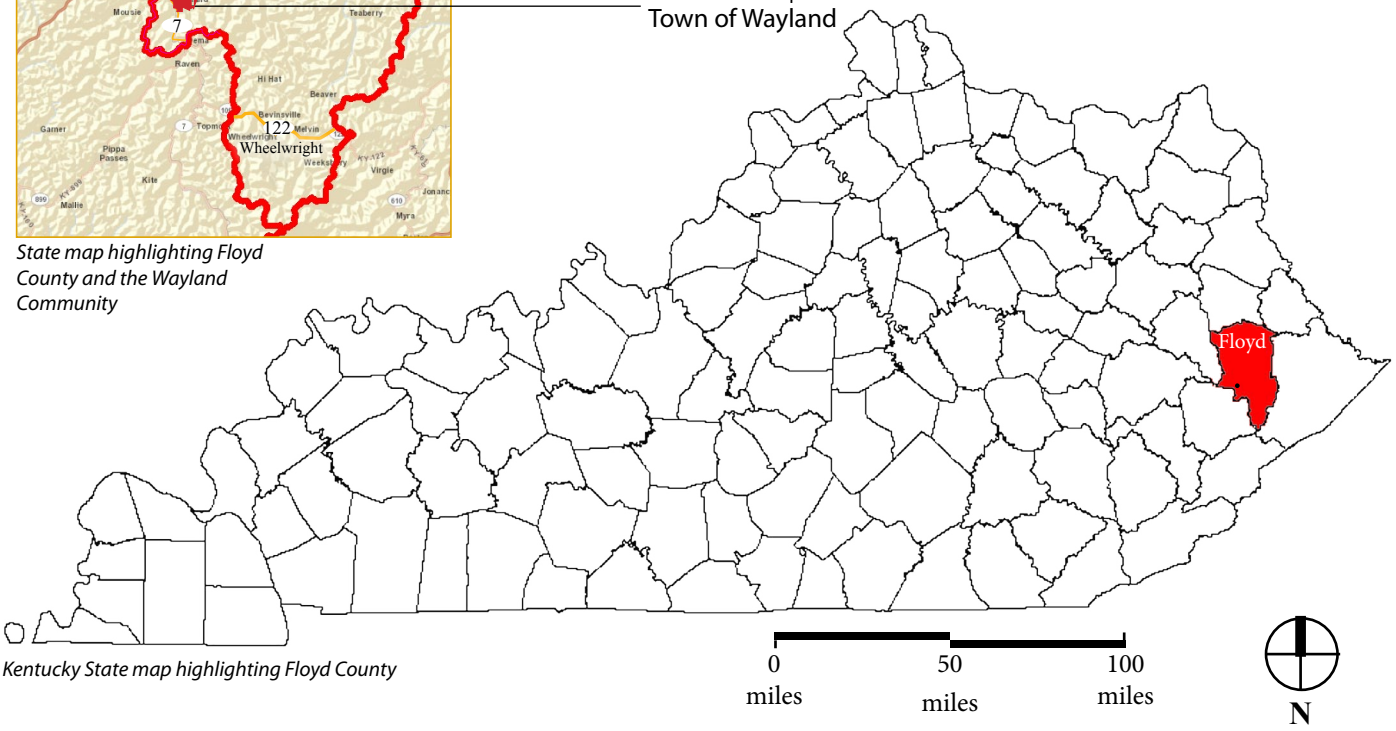
Project Description



State map highlighting Floyd County and the Wayland Community





Kentucky State map highlighting Floyd County

Floyd County is located in Eastern Kentucky along the western side of the Appalachian Mountains. Wayland, a small town located at the southeastern edge of the county, is home to around 300 residents according to the 2000 United States Census. Historically, Wayland was a coal mining town and is still actively mined at the 28 Holler location.

This project began when the Town of Wayland applied to the KY Division of Forestry for Southern Group of State Foresters grant funding. The Community Design Assistance Center (CDAC) was asked to lead a project team to design a park that would re-engage the community through recreational opportunities for both young and old while also highlighting the cultural heritage of the area. In particular, the Town stressed the desire for a little league baseball field as a means to bring more people to the area. The purpose of this project was to create a conceptual master plan and planting plan to provide the Town a basis in which to move forward with applying for grants and funding.

Throughout the design process, the Wayland Project Team, which consisted of the CDAC design team, representatives from Wayland, the Kentucky Division of Forestry, and Big Sandy Development District worked collaboratively to develop a conceptual plan for the Town of Wayland. This report documents the design process and describes the final concept that was developed.

Local Contextual Elements

1. Potential Park Space
2. Active Railroad (CSX Train Co.)
3. Gym
4. ABC Store/ Potential Diner
5. Former Wayland High School
6. Church
7. Post Office
8. Senior Citizens Center
9. Convenience Store/ Gas Station

The primary project site consists of a relatively flat, triangular shaped lot which is located at the base of the surrounding mountains. An active railroad borders the western side of the site while King Kelly Coleman Highway borders the entire eastern side. To the north lies the former Wayland high school and gymnasium. Also, to the north is an existing ABC store that may potentially become a diner in the future. Other surrounding elements include Wayland Methodist Church, the post office, senior citizens center, and convenience store/gas station.

Design Process/Site Visit

Jerry Fultz discusses his ideas for the park site.

CDAC Team member Harley Walker speaks with members of the Wayland Community

The project began with an initial site visit, where Mayor Jerry Fultz gave the CDAC project team a tour of Wayland, showing different aspects of the Town such as the active Holler 28 mining site, City Hall, Old Wayland High School and Gymnasium, the Fire Station, surrounding neighborhoods as well as the primary project site. The team took photographs, field measurements, soil samples, and percolation tests to gauge moisture. This allowed the CDAC team to establish a first hand understanding of both the community and the range of site conditions.

The team met with the community on several occasions to better assess the needs and desires of the community. The first meeting allowed the team to inquire about history, constraints, opportunities, and the initial desires of the community. The CDAC team was then able to return back to Blacksburg where they began to organize data and begin developing conceptual design alternatives.

The second meeting was a presentation of preliminary concepts to show the community a range of possibilities and voice their opinions. The pros and cons of each conceptual plan were discussed with the community and compiled so the team could return and combine the concepts into one final plan.

The team created a final design based on community feedback at the preliminary design presentation. The team returned for the final presentation in November where they presented the final conceptual master plan, planting plan, and supporting drawings/renderings.

Site Inventory and Analysis

Existing conditions of the park site and surrounding elements were inventoried during the CDAC team's initial site visit in August 2012. Photos were taken to document existing conditions and aesthetic views that could potentially influence future design. Field measurements were also taken for base map accuracy, marking important elements such as power lines and property lines.

Soil samples were taken throughout the site and later analyzed at the Virginia Tech soils laboratory. The tests concluded that the soil pH was extremely alkaline, ranging from 7.2 to 8.1. This would later become a major factor in the tree selection process and choosing trees that are tolerant of such soils. It is unknown for sure as to the cause for the alkaline soil, as it can be both man-made or natural.

Soil percolation tests showed that most areas of the site drained relatively well with the exception of the compacted areas where the train turntable once was.

The following pages include a photo inventory of the site and analysis maps.

Shale found in soil core sample

Sarah Gracey observes puddling prone areas while taking soil samples.

CDAC Team members take soil samples to test for quality.

Sarah Gracey and Lara Browning assist in determining site elevations and scale.

The site is backdropped by the active CSX rail line and surrounding mountains. Also noted were the power lines that run through the site which limit built structures and plantings in these particular areas.

This panorama shows a view from the lower park site up towards the old high school, gym, and diner area. There is a substantial grade change between the two areas. Image note: This panorama makes it appear the photographer is standing at the intersection of two rail lines when in fact it is one linear track distorted by the wide perspective.

This drainage ditch borders the site and captures a great deal of runoff from the Town and active mine site. King Kelly Coleman Highway runs parallel to the ditch and the former Wayland High School Gymnasium can be seen in the background.

Overflow from the drainage ditch is piped underneath the site and into a concrete drain that runs straight to the river.

Overlooking the lower park site, muddy areas tend to accumulate water during storms.

The adjacent lot to the current ABC store used to be a mobile home site, but is now an open flat lot that overlooks the lower site.

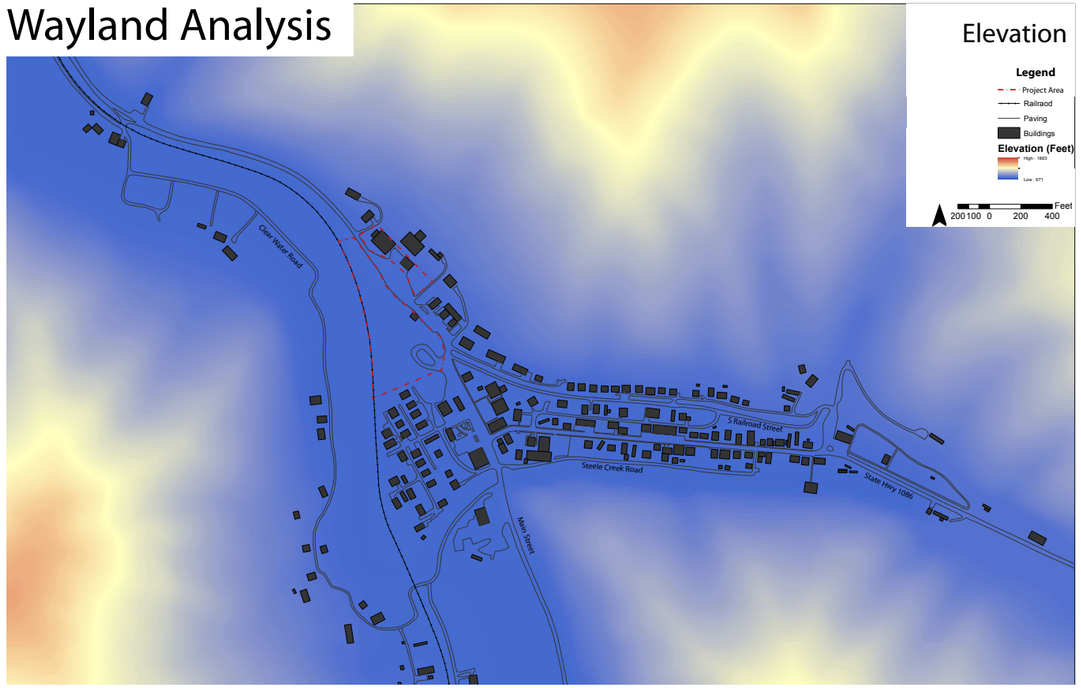
The curve in the road in front of the church decreases driver's vision of both oncoming traffic and pedestrians.

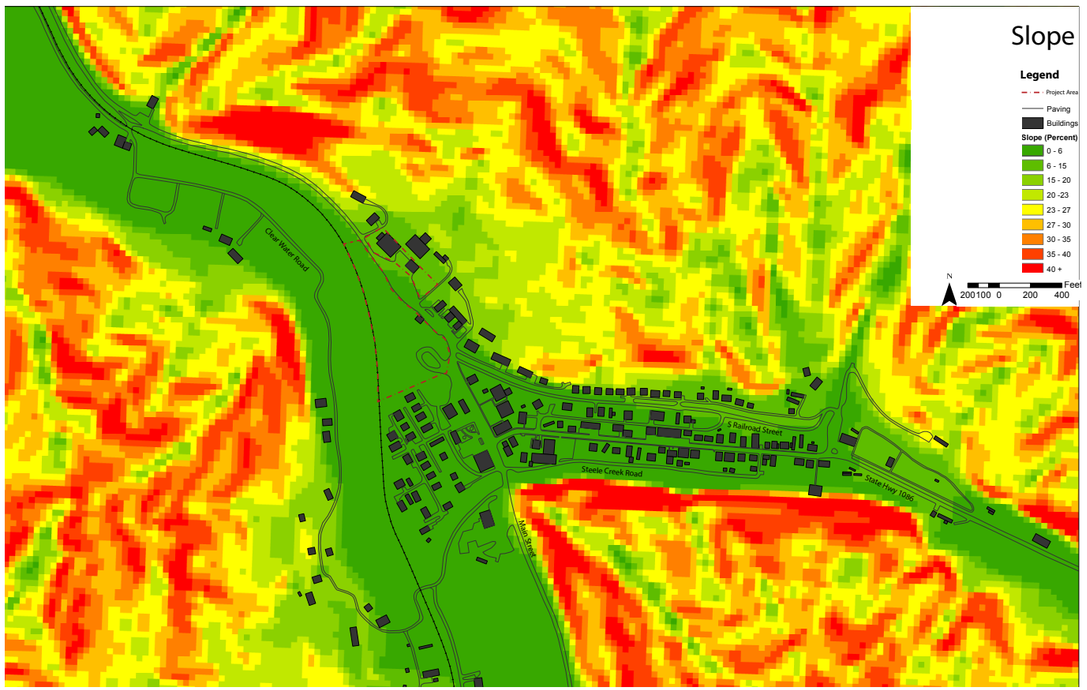
Pedestrian access from the Senior Citizens Center is limited due to heavy, fast traffic and no crosswalks.

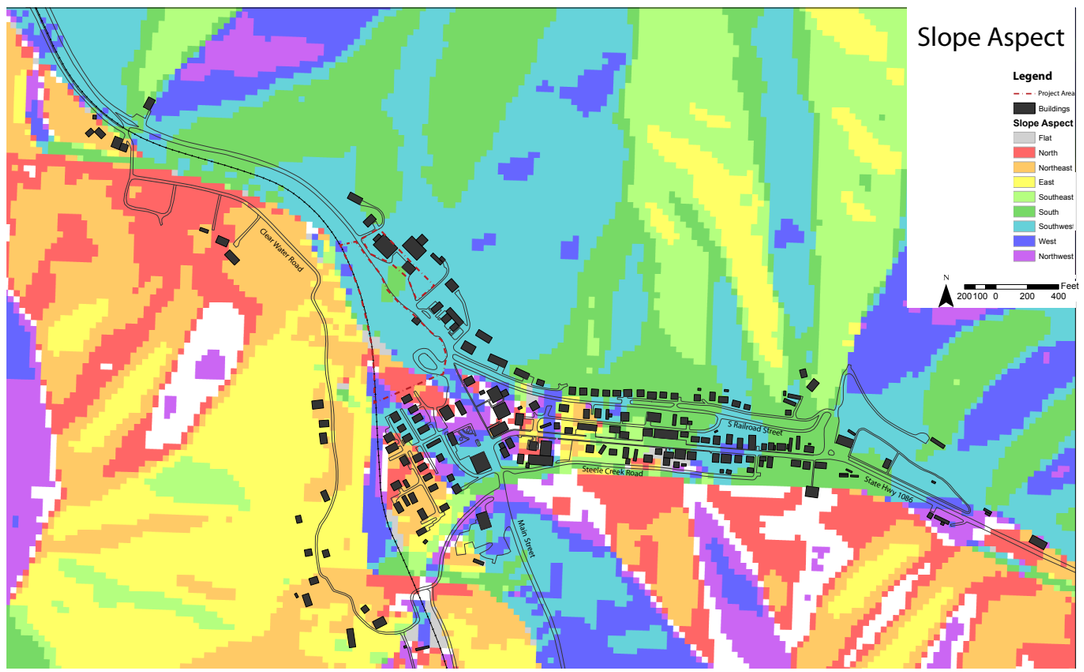
Site Inventory and Analysis - Analysis Maps

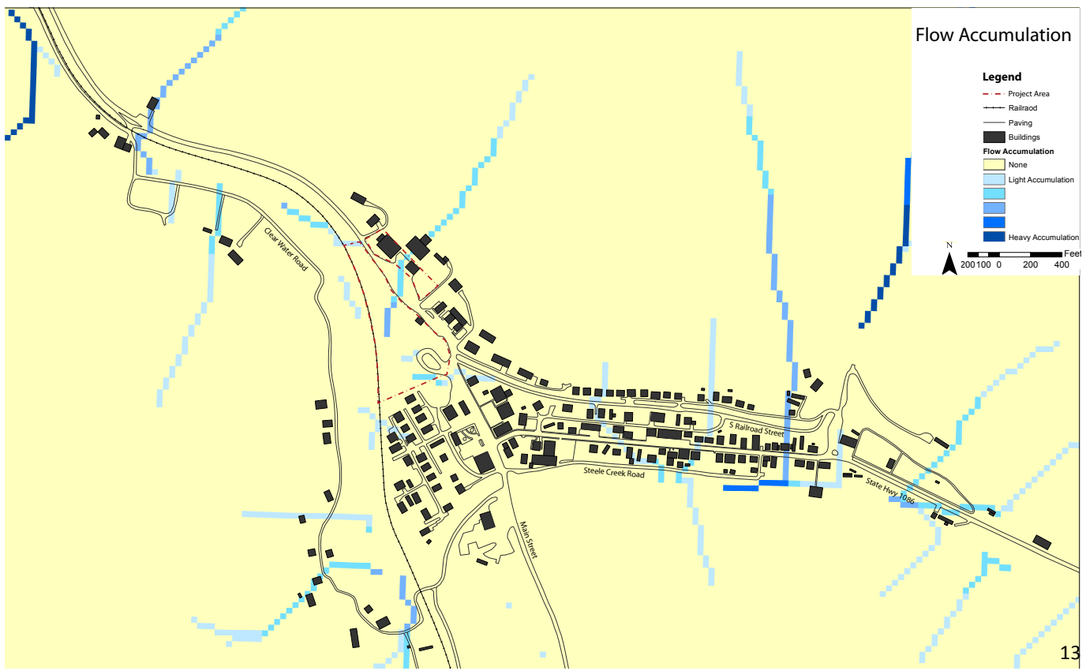
After conducting the initial on-site inventory and analysis, the CDAC team continued to analyze the property with GIS software (Geographic Information Systems). Elevation, slope, slope aspect (the direction a slope is facing), and flow accumulation (where water collects after it rains) were all looked at and combined into a final analysis map. These analysis maps can be seen on the following pages. The most significant elements that arose from the analysis were flow accumulation, slope, and elevation.

Wayland Analysis



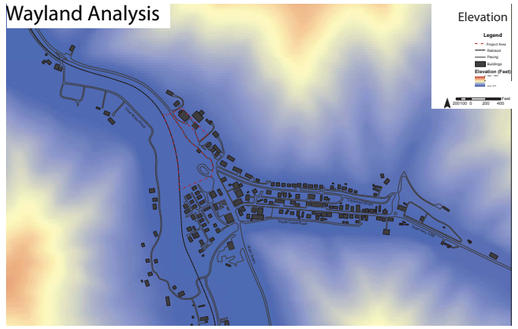






Synthesis

Wayland Analysis



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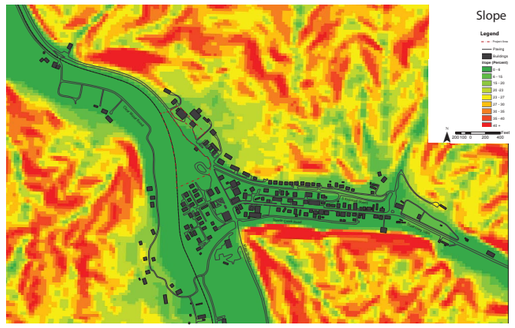

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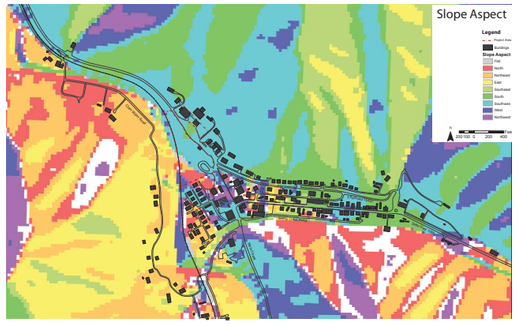

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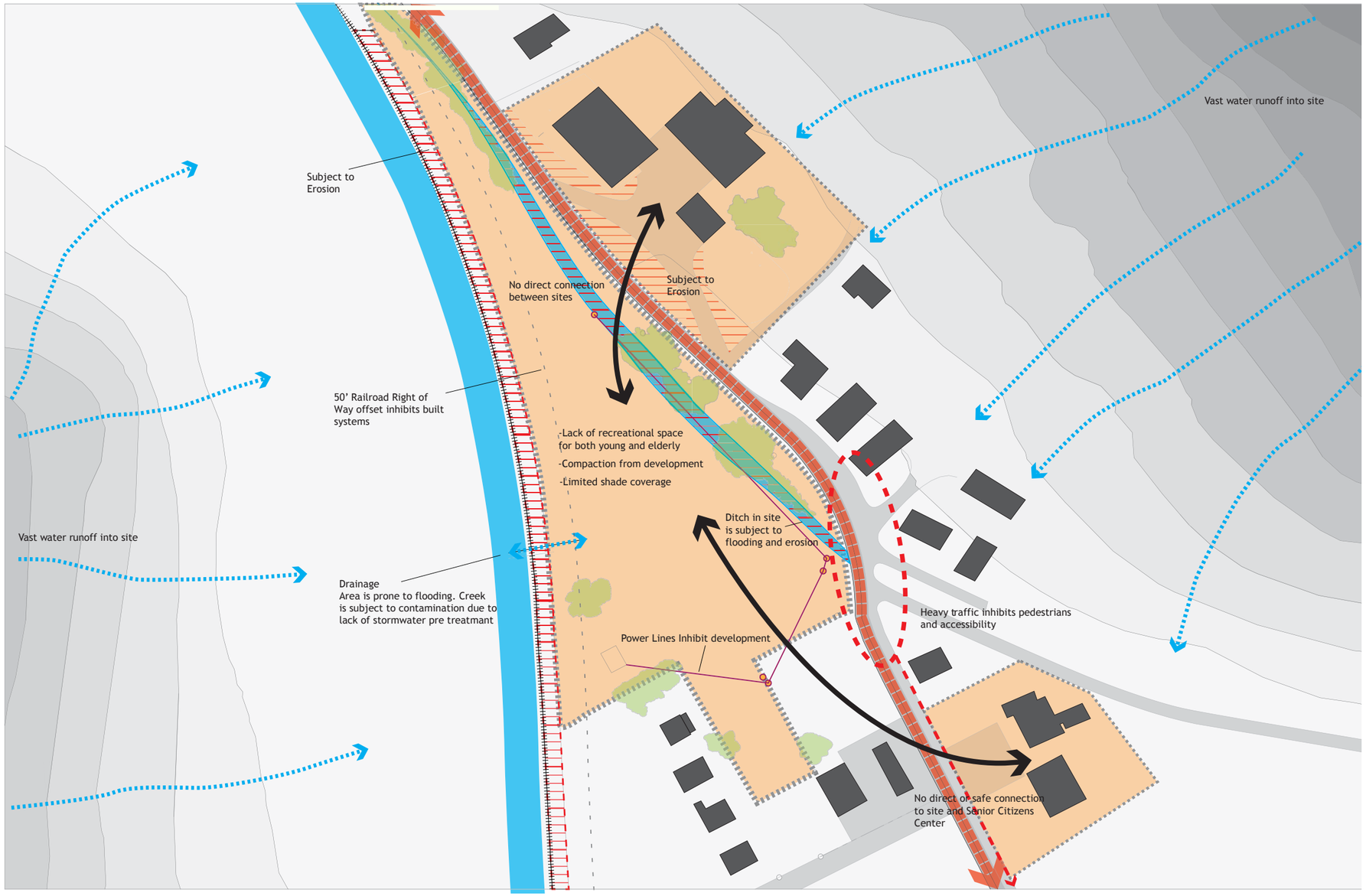

This analysis map is the result of combining the previous four GIS drawings with the on-site inventory and analysis results conducted during the initial site visit. This map shows the locations of existing vegetation, streams and ditches where water accumulates, erosion, topography, powerlines, traffic concerns, and disconnections. After creating this drawing, the CDAC team used it as a basis from which to design the layout of the preliminary design concepts.

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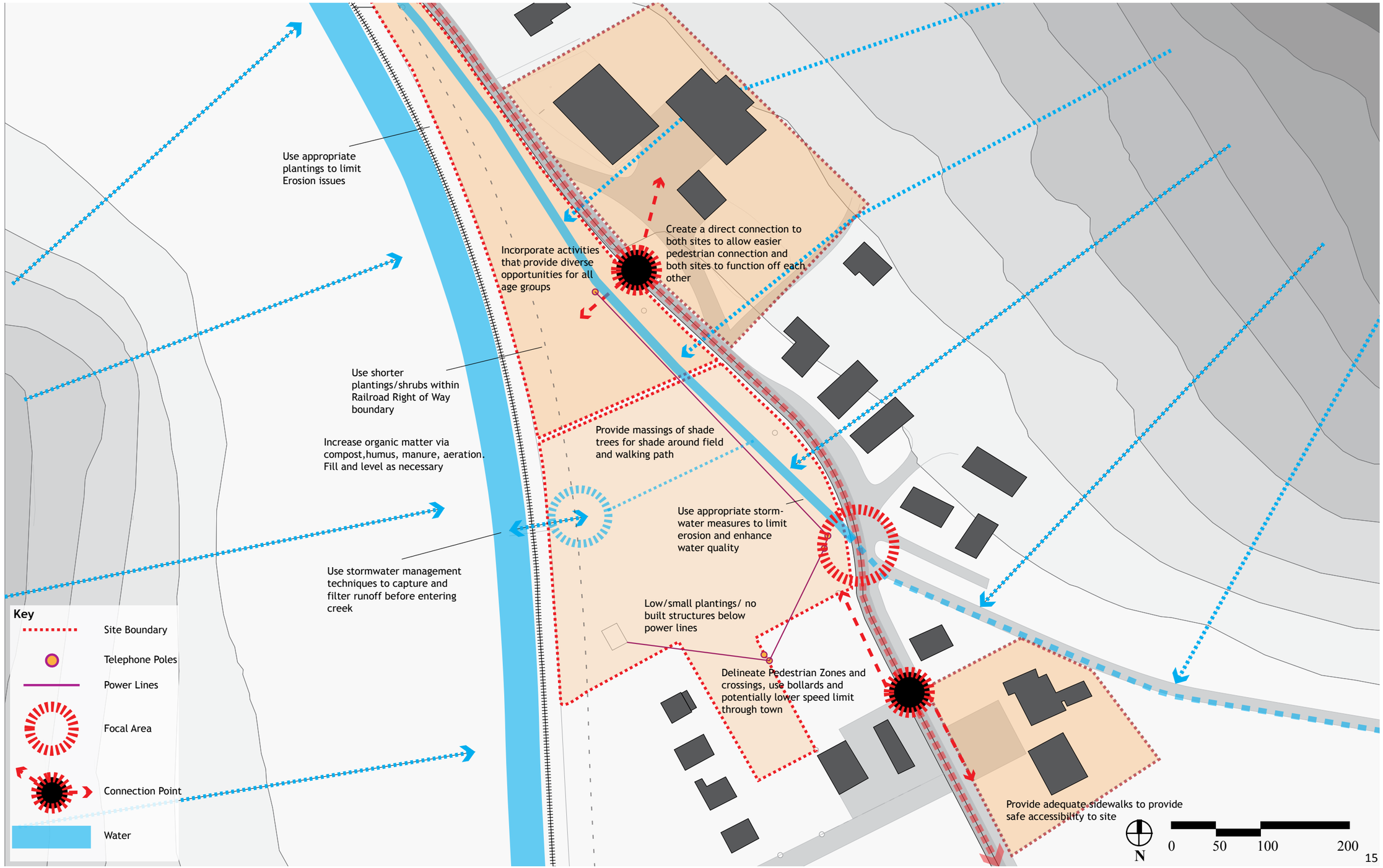
0 50 100 200

Opportunities



Preliminary Design Concepts

CDAC team member Brad Davis describes physical design constraints of the site.

CDAC team member Harley Walker presents traffic calming techniques and opportunities.

At the the preliminary design presentation, CDAC team members, Harley Walker and Brad Davis, each presented a variety of ideas to better help the community decide what direction to move forward in design development. Each presented three concepts for a total of 6 options. The following pages in this section depict all 6 options. They are broken down into Concept A and Concept B, each having three options. To summarize these concepts, the primary differences and similarities are noted below.

Concept A

Concept A's group of plans were designed to have a single route of access into the site so the park could be monitored more closely by local law enforcement and could be easily locked at night or when not in use. Concept A's entryways featured formalized groupings of trees with picnic tables in the understory. The playground was placed at the far northern end of the site to promote more use of the entire site and as a refuge from any flying baseballs. The lot beside the future diner site featured an outdoor booth-like sitting area in the design to compliment the interior character of the diner and allow a view to the baseball field. In Concept A-2, (pg. 18) a U5 (fifth grade and under) soccer field was placed in the lot adjacent to the convenience mart as another potential option.

Concept B

Concept B's group of plans were designed to have multiple access points to better connect the surrounding town to the site. Including a primary entry way, parking lot access point, and a northeastern connection to the diner site. Concept B's entryways were formal and open with perimeter seating so as to be a transformable gathering space for events. A pavilion was incorporated adjacent to a large open space to accomodate Town events, concerts, festivals, etc. The playground was placed adjacent the large open space to allow parents the ability to watch children and still participate in events. The lot beside the diner featured a small picnic shelter and space for the future Mountain Sports Hall of Fame. In Concept B-2, a soccer field was placed instead of a baseball field to again show a diverse group of options for the community.

Both Concepts A and B featured a historical reference to Wayland, whether through a single wall mural or multiple walls. Both plans also had a stormwater managment area around the concrete drain to the creek. Pedestrian access was also acknowledged similarly with a pedestrian crosswalk perpendicular the post office in both plans as it was deemed the safest area for pedestrian passage.

During the process of conceptual development, the CDAC team also compiled images to capture the overall feeling and emotion the team wanted to convey for the concepts as well as show the community ideas and possibilities that could be applied to the site and overall project. This was a simple way of giving the community visual ideas to which they could relate and voice their opinions upon. (pg.23-24)

Softball Field Orientation 1 (SE-NW) - Concept A-1

Primary Features

1. Softball Field
   -Regulation size for high school softball and little league
2. Gathering Space
3. Press Box with Wall Mural
   -Mural Depicting Wayland History
4. Shaded Activity Area
   -Picnic areas with horse shoes and corn hole
5. Stormwater Management Area
   -Capture are removal of pollutants before infiltration and runoff to stream
6. Playground
   -Train-themed
7. Bus Parking
   -Spaces alotted for team buses
8. Gymnasium
   -Basketball and track
9. Former School/Adaptive Reuse
   -Opportunity to convert old school into living space or municipal, library, theater,historical society use
10. Future Diner
    -50's style diner
11. Outdoor Dining Area
12. Potential Mountain Sports Hall of Fame Site
13. Parallel Parking
14. Stormwater Management
    -Tall grasses to slow and filter stormwater runoff
15. ADA Crosswalk
    -Handicap accessible crosswalk with choke to slow traffic
16. Rumble Strips
    -Traffic calming technique to slow traffic
17. Parking Lot

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Primary Features

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15. ADA Crosswalk
    -Handicap accessible crosswalk with choke to slow traffic
16. Rumble Strips
    -Traffic calming technique to slow traffic
17. Parking Lot
18. Soccer Field

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Softball Field Orientation 1 (SE-NW) and Soccer Field - Concept A-2

Softball Field Orientation 2 (SW-NE) - Concept A-3

Primary Features

1. Softball Field
   -Regulation size for high school softball and little league
2. Gathering Space
3. Press Box with Wall Mural
   -Mural Depicting Wayland History
4. Shaded Activity Area
   -Picnic areas with horse shoes and corn hole
5. Stormwater Management Area
   -Capture are removal of pollutants before infiltration and runoff to stream
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Primary Features

1. Softball Field
   -Regulation size for high school softball and little league

2. Press Box with Wall Mural
   -Mural depicting Wayland history

3. Shaded Activity Area
   -Picnic areas with horse shoes and corn hole

4. Stormwater Management Area
   -Capture are removal of pollutants before infiltration and runoff to stream

5. Pavilion Area
   -Covered pavilion to provide opportunity for outdoor concerts, movies, and festivals

6. Playground
   -Train-themed

7. Deck Overlook/North Site Connection
   -Stairway connection to diner and gym

8. Bus Parking
   -Spaces alotted for team buses

9. Gymnasium
   -Basketball and track

10. Former School/Adaptive Reuse
    -Opportunity to convert old school into living space or municipal, library, theater,historical society use

11. Future Diner
    -50's style diner

12. Picnic Shelter

13. Potential Mountain Sports Hall of Fame Site

14. Parallel Parking

15. Stormwater Management
    -Tall grasses to slow and filter stormwater runoff

16. ADA Crosswalk
    -Handicap accessible crosswalk with choke to slow traffic

17. Rumble Strips
    -Traffic calming technique to slow traffic

18. Parking Lot

Softball Field Orientation 1 (SE-NW) - Concept B-1

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Primary Features

1. Soccer Field
   -Sized for 13 and under

2. Wall Murals and Gathering Space
   -Mural depicting Wayland history and space for community events

3. Shaded Activity Area
   -Picnic areas with horse shoes and corn hole

4. Stormwater Management Area
   -Capture are removal of pollutants before infiltration and runoff to stream

5. Pavilion Area
   -Covered pavilion to provide opportunity for outdoor concerts, movies, and festivals

6. Playground
   -Train-themed

7. Deck Overlook/North Site Connection
   -Stairway connection to diner and gym

8. Bus Parking
   -Spaces alotted for team buses

9. Gymnasium
   -Basketball and track

10. Former School/Adaptive Reuse
    -Opportunity to convert old school into living space or municipal, library, theater,historical society use

11. Future Diner
    -50's style diner

12. Picnic Shelter

13. Potential Mountain Sports Hall of Fame Site

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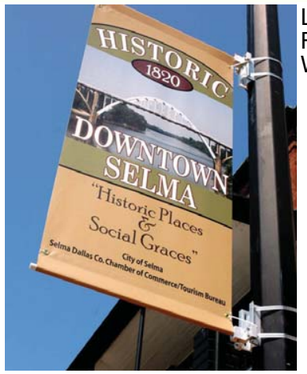
Conceptual Photo Examples

Adaptive Reuse of Old High School into New Facilities

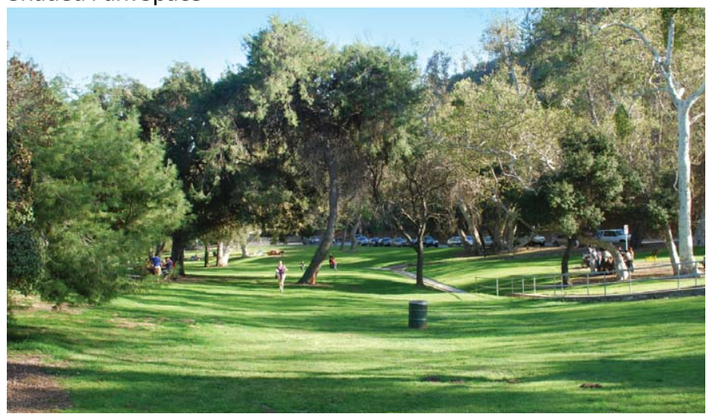
Adaptive Reuse of Old High School into New Facilities

New Diner Example



Lamp Posts and Flags to Mark Wayland City Limits

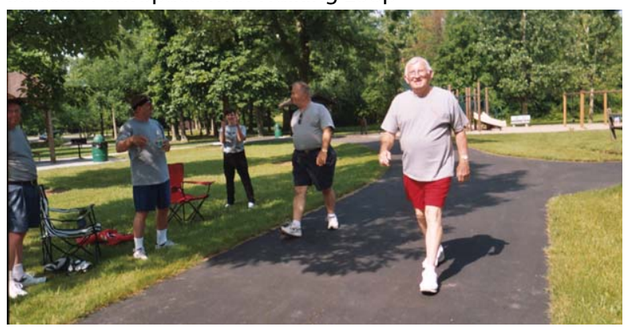
Shaded Park Space



Fields for both Little League and Softball Use

Formal Grid of Trees

Shaded Park Space with Walking Loop



Recreational Activities for Elderly

Train-themed Playground Equipment

Stormwater Management along Ditch and Drain

Handicap Accessibility to Site

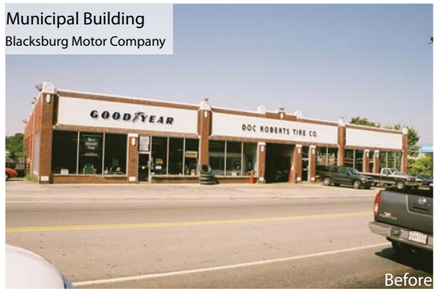
Murals to tell story of Wayland

Ideas for Adaptive Reuse

Art Center
The Niagara Arts and Cultural Center

The Niagara Falls Central High school was built in 1924. It was replaced by a new school in 2000 and was adapted for reuse as an arts and cultural center. Today it houses over 60 artist studios, 2 theaters and 2 galleries.

Municipal Building
Blacksburg Motor Company



Built as a car repair shop and dealership in 1924, the Blacksburg Motor Company was adapted for reuse in 2009. Now it serves as a municipal building housing the town's Planning, Building, Engineering and GIS departments.

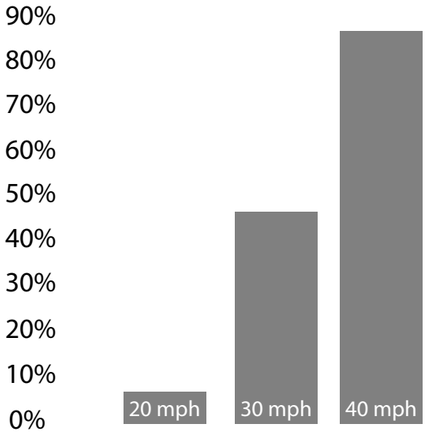
Office Building
Irvington Office Center

Built in 1929, Indianapolis Public School No. 85 was adapted for reuse in 1998 as an office building. Today the old school houses 12 businesses ranging from Accounting to Interior Design.

Affordable Housing and Clinic
Riverview at Clendenin School

Originally built in 1927, the Clendenin Public School was purchased and adapted into 24 affordable apartments for the elderly and a health care clinic in 2012.

A Pedestrian's Chance of Death If Hit By A Motor Vehicle



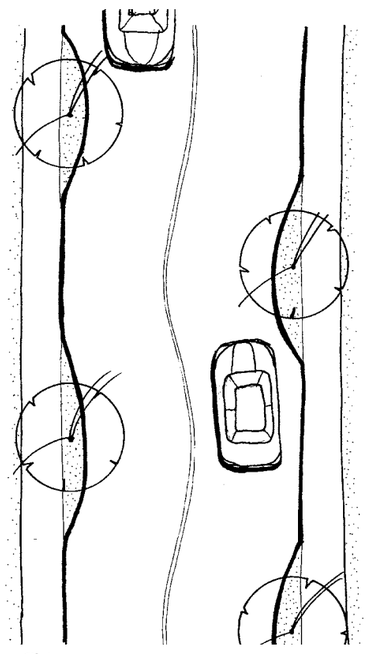
Killing Speec and Saving Lives, UK Dept. of Transportation

Effective Traffic Calming Devices

	Volume Reduction	Speed Reduction	Conflict Reduction
Speed Bump	M	S	M
Speed Hump	M	S	M
Speed Table	N	M	N
Circle	M	M	S
Chicane	**M**	**M**	**N**
Raised Crosswalk	M	S	M
Raised Intersection	N	M	M
Neckdown	N	M	M
Chokers	**N**	**M**	**M**
Textured Pavement	N	N	N
Rumble Strip	**N**	**M**	**N**
Pedestrian Refuge	N	M	M
Median Barrier	S	N	M
Forced-turn Island	M	N	M
Speed Limit Signing	N	M	N
Turn Prohibitions	M	N	M

S = Significant M = Medium N = None

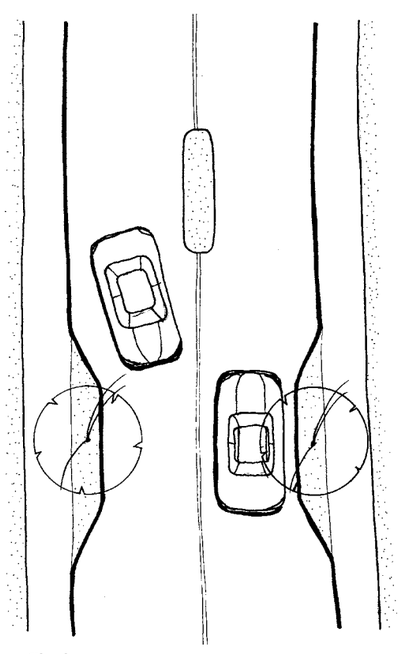
Chicanes



Chicane

Chicanes slow traffic by forcing vehicles to weave in between barriers. The act of turning causes the driver to decelerate.

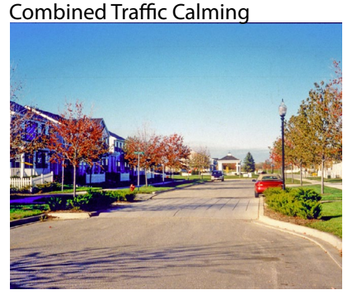
Chokers

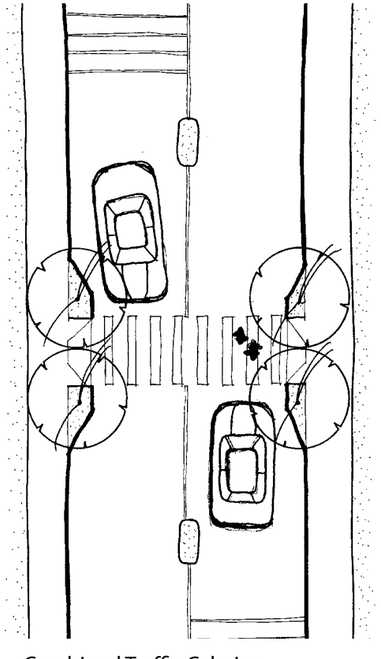


Chokers

Chokers slow traffic by narrowing the road to the minimum allowable width. The visual and physical narrowing of a passage causes a driver to respond by slowing down.

Combined Traffic Calming





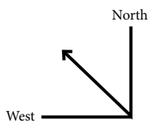
Combined Traffic Calming

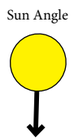
Traffic calming devices are most effective when used together. This diagram shows a crosswalk combined with a traffic choker. Rumble trips warn drivers of the nearing crosswalk.

Field Orientation

Wayland, Kentucky

Orientation 1 (SE-NW)



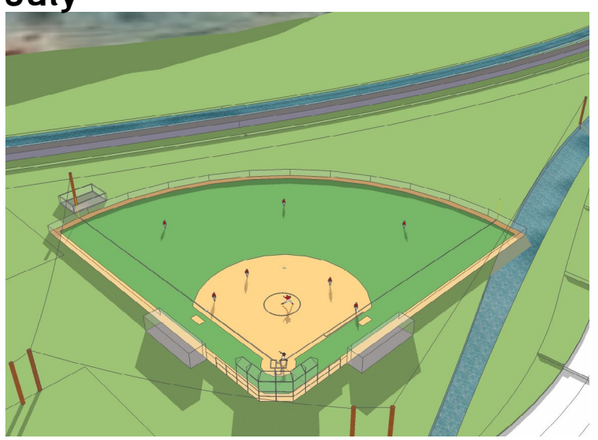


The site's size restricts the orientation of the field to either a SE-NW or a SW-NE orientation. Research on the best orientation for field revealed that a SW-NE orientation is generally the optimal angle to orient a baseball field. A sun angle study was then conducted to determine the best orientation of the field so that the least amount of players, more specifically the batter were not affected by the late evening sunlight. Orientation 2 (SW-NE) turned out to be the most ideal as no players would be affected in the evening sun during the primary months of play. Below are the final results of the study.

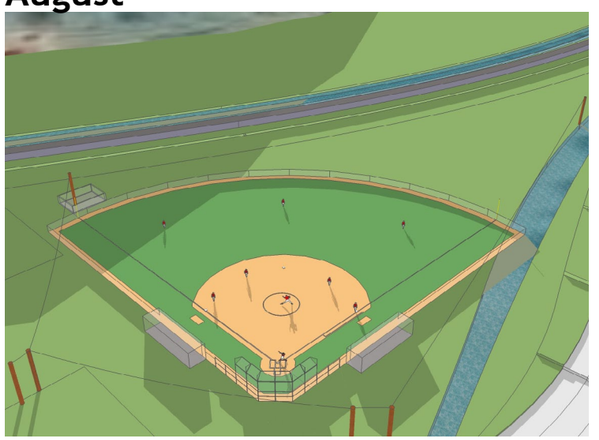
May

June

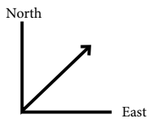
July

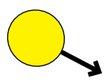


August



Orientation 2 (SW-NE)





May

June

July

August

Final Conceptual Master Plan

CDAC Team member Brad Davis presents the final conceptual master plan

CDAC Team member Harley Walker presents the planting plan

Based on community feedback from the preliminary concept presentation, initial designs were compiled into one final plan that featured the elements that the community agreed were most important.

The final Conceptual Master Plan consists of a regulation sized little league/high school softball field in the SW-NE orientation as requested by the community based on sun angles. The primary entry space in this plan consists of an open, formal entry plaza with perimeter seating. The scale allows the space to transform into multiple uses for the community whether it's a bake sale, farmer's market, church, or community related event. Flowering ornamental trees add texture, color, and shade to the space. The plaza also features multiple wall murals depicting Wayland's history. It pays homage to the train turntable that once occupied this space through inlays in the pavers that replicate train tracks and diffuse in opposing directions. Adjacent to the entry space is a well shaded activity area where games such as horseshoes and cornhole could be played leisurely by people of all ages.

Along the western side of the site is a stormwater managment area designed to capture and filter water through grasses, rushes, sedges, wildflowers, and herbaceous plants before entering the creek. An overlook provides visitors with the opportunity to stop and watch the ecosystem at work.

As far as the field itself, bleachers sit parallel to the fence line between the team dugouts and press box. Access along the fence lines allow easy maintenance access and extra space for large events. Trees informally line the outfield fence as a form of safety to help stop any flyballs from reaching the open space and playground.

Directly north of the field is a grassed open space that could be used for events or recreational use. At the western edge of this open space is a pavilion which can become an everyday retreat, but when combined with the open space, it can host concerts, festivals, movies, and other town events.

To the far north, is a fenced playground directed towards elementary aged children and toddlers. It features a train-themed play structure, sandbox, and handicap accessible equipment so as to create a playspace that is non-restrictive, but welcoming to all children. A secondary path meanders around the playground to serve as an extension to the playground where children can ride bikes or explore with chalk.

Picnic tables and benches can be found adjacent to the primary path where people can escape the heat, eat, watch a game, or all of the above. The primary path borders the boundary of the site and has very little grade change making it convenient whether it's a morning run or an evening walk. The proposed path is eight feet wide to accomodate maintenance and emergency vehicles that may need to access the site.

Small plantings border the eastern side of the site to serve as a buffer to the drainage ditch and road. The drainage ditch itself would feature grasses and other pollutant removing plants to filter runoff.

Final Conceptual Master Plan

To the northeast sits the old Wayland High School, Gym, and ABC store. The Town is proposing the idea that the ABC store possibly become a 50's style diner in the future so in this concept, the adjacent lot has been designed to support the diner. Here, an outdoor booth-themed picnic area accents the diner and allows users the ability to experience it outdoors where they can also watch a baseball/softball game simultaneously.

Traffic calming and pedestrian safety elements have also been incorporated into the final conceptual plan. A choker and main crosswalk are proposed in front of the post office to slow traffic and create a safe transition from sidewalk to sidewalk. The crosswalk was placed here as it seemed the safest area to cross due to the placement of the gas station parking lot and senior citizens center. Here, the choker slows traffic and also accents the historic post office. Rumble strips are also placed along the road to prepare drivers to slow down for crosswalks and higher pedestrian activity.

Rumble strips and tree plantings are used at the base of the old high school complex to slow drivers down. The trees will narrow the driver's perception of space, causing them to slow down near the old high school complex. A crosswalk is also placed in the northeast area to aid in connecting the lower site to the upper diner site. A deck overlook (7) physically connects the upper and lower sites providing another entrance to the park as well as another place to sit and watch a ball game.

A well shaded parking lot (17) is available south of the field where access to the park is most convenient. Additional parallel parking is located along the roadside across from the church and high school site(13). School bus parking is available along the upper diner site (8).

Primary Features

1. Softball Field
   -Regulation size for high school softball and little league

2. Wall Murals and Gathering Space
   -Mural depicting Wayland history and space for community events

3. Shaded Activity Area
   -Picnic areas with horse shoes and corn hole

4. Stormwater Management Area
   -Capture are removal of pollutants before infiltration and runoff to stream

5. Pavilion Area
   -Covered pavilion to provide opportunity for outdoor concerts, movies, and festivals

6. Playground
   -Train-themed with handicap accessibility

7. Deck Overlook/North Site Connection
   -Stairway connection to diner and gym

8. Bus Parking
   -Spaces alotted for team buses

9. Gymnasium
   -Basketball and track

10. Former School/Adaptive Reuse
    -Opportunity to convert old school into living space or municipal, library, theater,historical society use

11. Future Diner
    -50's style diner

12. Outdoor Picninc Area
    -Booth seating to compliment diner

13. Parallel Parking

14. Stormwater Management
    -Tall grasses to slow and filter stormwater runoff

15. ADA Crosswalk
    -Handicap accessible crosswalk with choke to slow traffic

16. Rumble Strips
    -Traffic calming technique to slow traffic

17. Senior Citizens Center Park Extension
    -Easy access for elderly, with adequate shade and seating

18. Parking Lot
    -Shaded with handicap accessibility

Primary Path Length = 1,530 ft. = .28 miles

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Virginia Polytechnic Institute and State University

1. Primary Pathway

Permeable asphalt is a durable material that allows water to percolate through and recharge groundwater. These photos demonstrate the capabilities of the material. The photo to the far right shows an apparent difference between regular asphalt and permeable asphalt.

http://preservation.com/Planet-detail/eco-friendly-permeable-paving-systems/

http://3.bp.blogspot.com/_Ymx9e66vrGc/Sh1LlhIh_AI/AAAAAAAAI2c/k436-e1EgGI/s400/January_2008_196.jpg

2. Entry Space

Dry laid permeable pavers allow water passage between pavers and back into the groundwater. This reduces sheet runoff and puddling during storms.

http://www.werf.org/liveablecommunities/studies_den_co.htm

http://ayardandahalf.files.wordpress.com/2012/11/permea-paving.jpg

3. Murals

Materials such as concrete and stainless steel are resilient to water damage and also serve in aesthetically preserving an industrial ambience to the space.

http://farm5.static.flickr.com/4066/4319541781_2c2385834a.jpg

http://weaversmill.files.wordpress.com/2011/01/stainless-steel.png

4. Pavilion

Concrete would be an excellent choice for the base of the pavilion that is proposed for the lower elevations of the park site that are most prone to flooding. Decay resistant wood would be an excellent choice for the exterior sheeting and framework.

http://www.corbisimages.com/images/Corbis-42-36142867.jpg?size=67&uid=b44a59db-48b8-4159-bae4-f0c206166e58

http://images.doityourself.com/sequoia-images/450x300/489/How-to-Waterproof-a-Wood-Deck-5489.jpg

5. Playground

Using recycled materials such as PVC and Rubber, playground surfacing tiles are an ecologically friendly, permeable material to use in fall zones. These tiles can be removed easily for maintenance and available in an assortment of colors. Recycled rubber mulch is also another option.

http://www.playmatta.com/newzealand/page.php?id=1

http://www.pennsylvaniarubbermulch.com/images/gallery-8-bg.jpg

Material Locations

Entry Plaza

Existing view of the entrance into the park site.

The current entry into the site is a gravel driveway loop. This is also the location where the old train turntable used to sit.

The proposed entrance will consist of a plaza in the location of the former turntable. It will pay homage to the old turntable in its design with inlays that resemble train tracks that direct the visitor through the plaza. Murals of Wayland's history serve as a backdrop to the plaza and shaded seating area.

This perspective shows the entrance into the park. A hardscape with benches provides a shaded place to sit. Murals of Wayland's history are displayed on walls along one edge of the hardscape revealing some of the history of the site and town.

Activity Area

Existing view of the activity area location.

The activity area is currently just an open, grassed area with no specific purpose.

The proposed activity area will provide recreational opportunities for everyone through simple games such as horseshoes and cornhole. This area is also easily accesible to disabled and elderly as it is flat and well shaded. Shade trees border the fence along the field, overshadowing picnic tables below. The offset of the trees along the primary site path in this area provides additional space for community events to take place.

This is a view of the activity area within the park. Horseshoes and Cornhole provide leisurely recreation for people of all ages. Benches are located along the ball field fence where friends and family can socialize while watching a game.

Deck Overlook

Existing view of the deck overlook space.

The deck overlook space is currently a steep bank that overlooks the lower park space and drainage ditch. The project site basically breaks up into three planes and the deck overlook serves as a direct link between the three.

The proposed overlook allows easy transition between the lower park site and the upper diner site. It provides an economical opportunity for the diner as it promotes visitors to visit the diner for concessions during baseball/softball games. The overlook also gives users a place to watch a game, people watch, or rest.

The proposed deck overlook and second entrance into the site. The stairs connect the park to parallel parking along the road and to the future 50s diner across the street.

Stormwater Capture

Existing view of large drain to creek.

The lower park site is very prone to flooding and the concrete drain to the left is how the water is primarily directed out of the site. The existing drain area consists of an overflow pipe that flows into a large concrete ditch and straight down into the creek. Since the water is directed piped out and into the creek, contaminants have an opportunity to have an negative ecological impact on the creek and any species that interact with the creek.

A proposed stormwater managment area provides an opportunity to filter stormwater contaminants before reaching the creek while also creating a beautiful ecosystem that is beneficial to native wildlife.

This perspective shows the water treatment area. Stormwater is directed into a bioswale planted with tall grasses and wetland shrubs where it infiltrates into the ground. Pollutants and contaminants are filtered out of the water before they can reach the creek on the other side of the train tracks.

Pavilion

Existing view of proposed pavilion location.

Currently, the proposed pavilion space is open and subject to flooding as it is along the lower elevations of the lower park site.

The proposed pavilion will provide a great opportunity for both the town and surrounding communities. The pavilion would serve as a day to day space for retreat, shade, or friendly conversation. It can also serve to host special events such as birthday parties, concerts, festivals, movies, church services, etc. It can also be built of materials that are resistant to flood and water damage.

This perspective is a view of the Pavilion and open lawn. This space is flexible and can be used for a variety of community gatherings or events. The pavilion provides a shaded place to sit on the average day or can act as a stage for musical performances. The pavilion can be built a number of ways to work within the Town's budget. A concrete base would be ideal for flood situations and could be capped with decay resistant wood to withstand mother nature and add aesthetic value.

Playground

Existing view of proposed playground area.

The proposed playground space is located in the far corner of the lower site. It is currently a muddy, eroded area that is subject to flooding and puddling.

A playground would be an excellent way to provide recreational opportunies for young children. The proposed playground is handicap accessible and provides recreation and opportunity for all children of differing abilities.

This is a view of the playground. Train-themed playground equipment reflects the history of the site and nearby train tracks. Another playset is handicap accessible.

Diner Picnic Area

Existing view of proposed picnic area beside future diner.

The current site of the proposed picnic area is a relatively flat open space beside an ABC store.

The proposed picnic area would provide users with a shaded space to eat and enjoy the weather or watch a ball game simultaneously. The design of the area is to use vegetation to mimic and resemble booths that are characteristic of 50's style diners.

This is a view of outdoor seating for the future 50s diner. Four seating areas are separated by vegetation and resemble the character of restaurant booths. These booths are open yet semi-private. The two booths nearest the road have a view of the ball field.

Crosswalk

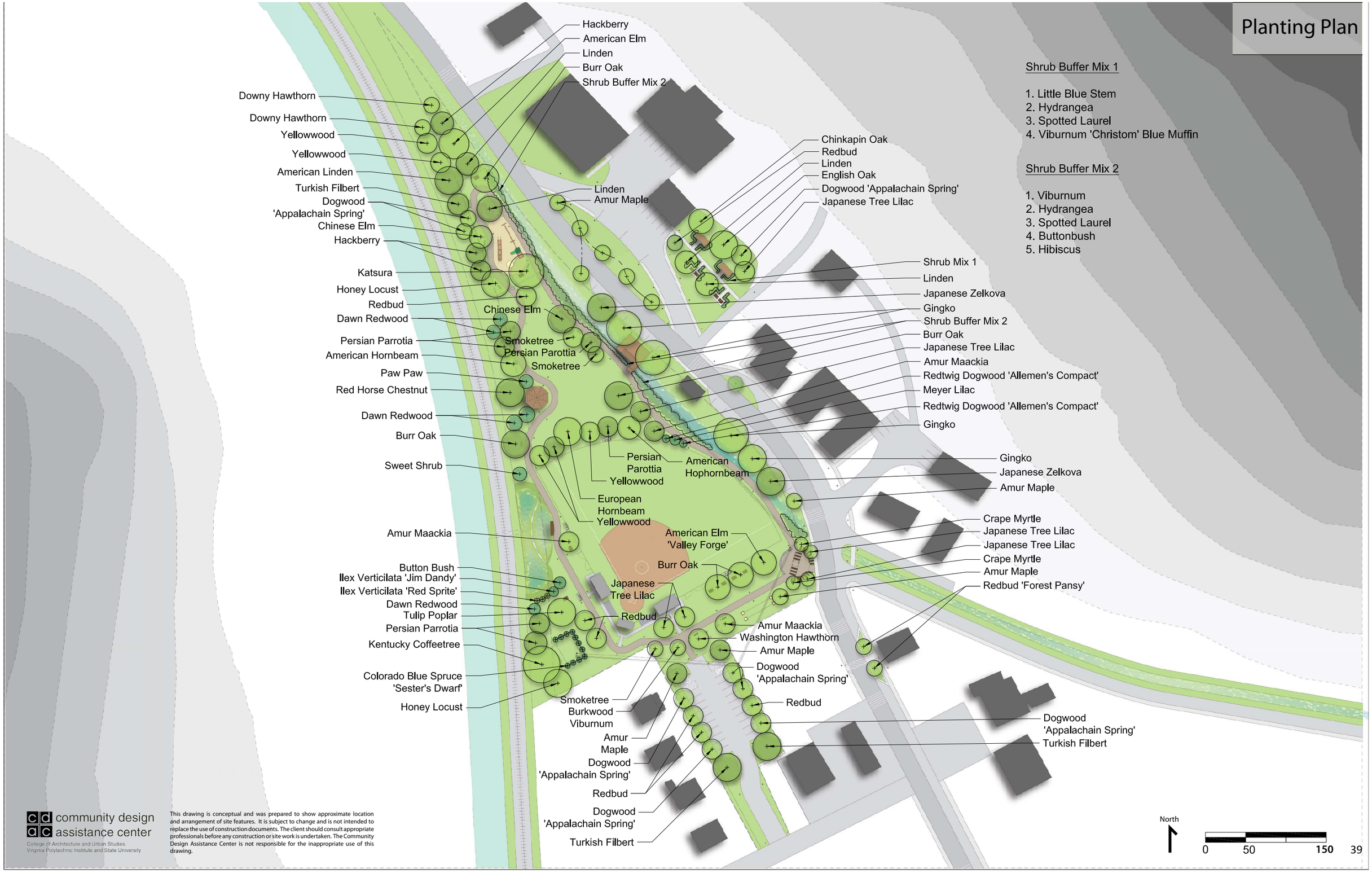
Existing view of the proposed crosswalk area.

Currently, there is no crosswalk along King Kelly Coleman Highway in the town of Wayland. This road is consistently busy and safety is of concern for pedestrians. In an effort to make the town more easily accessible and walkable, crosswalks are a necessity.

Through site visits and analysis, it was determined the most ideal location for a primary crosswalk would be in front of the post office. Here, a crosswalk would highlight the historic post office while being convenient to the senior citizens center and not interfering with the gas station/convenience mart. Chokers and rumble strips would be used to slow traffic before reaching crosswalks.

This perspective shows the proposed crosswalk and traffic calming devices in front of the post office. The combination of rumble strips, flashing lights, and a traffic choker slow vehicles as they approach the crosswalk.

Planting Plan



Shrub Buffer Mix 1

1. Little Blue Stem
2. Hydrangea
3. Spotted Laurel
4. Viburnum 'Christom' Blue Muffin

Shrub Buffer Mix 2

1. Viburnum
2. Hydrangea
3. Spotted Laurel
4. Buttonbush
5. Hibiscus

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Tree Phasing

These are examples of 3 possible phases for tree plantings. These phases are determined based upon order of construction. Phase 1 can begin before any major construction takes place. Phases 2 and 3 are dependent upon specific constructed elements. For example, Phase 2 plantings aren't recommended until the pathway is implemented and the field is in place. Phase 3 plantings are subject to having the field, pathway, and parking lot in place for most accurate placement and reduced risk of tree damage during construction.

Phases

Phase 1

Phase 2

Phase 3

N

Conclusion

Wayland wasn't just a town built on coal. It was a front porch community where everyone once knew one another's name and what was going on. They watched each other's children grow up playing along the streets and didn't miss a Wayland Wasps basketball game. However, just like everything else, time has taken its toll on the landscape, but all is not lost. Wayland has many positive attributes. The surrounding mountains reveal a small town encompassed with stories, sports legends, beautiful historic structures, old fashioned fountain drinks, and a passion to blossom once again. Wayland can be improved such that it builds on these existing features to better become a place of expression, remembrance, and celebration so that once again, it can become the front porch it used to be. It is hoped that the new town park can aid in this rejuvenation.

The Wayland Community Park Conceptual Master Plan compliments the existing features of Wayland. It addresses existing issues and provides new physical, recreational, and economic opportunities for the community. There is potential to bring new life to Wayland such that it is no longer a town to "pass" through but rather a town to "stop" in. This master plan serves as a tool for the community of Wayland to apply for grants and make this concept a reality.

Appendices

Appendix A: Soil Results

Lab Results

Soil PH

Low
High

Target PH 6.2
Mod. Acidic: 5.6-6.0
Don't want pH levels above 7

Phosporus
Ideal Levels: 12-35 lb/A

Potassium
Ideal Levels: 76-175 lba/A

Calcium
Ideal levels: 721-1440 lb/A

Magnesium
Ideal levels: 73-144 lb/A

Zinc

Soluble Salts
Injury to plants above 844 ppm

Cation Exchange Capacity
Natural Soils: 1-12 meq/100g

person	sample_id	labid	ph	bph	pctacidity	pctbasesat	p	p_rating	k	k_rating	pctksat	ca	ca_rating	pctcasat	mg	mg_rating	pctmgsat	zn	mn	cu	fe	b	om	om_rating	ss	ss_rating	cec
COMMUNITY DESIGN ASSISTANCE	WAY01	40812	7.62	N/A	N/A	100	2	L	43	M-	0.4	4975	VH	95.5	130	VH	4.1	1.5	10.1	0.1	1.7	0.7	5.2	VH	102.0	L	26
COMMUNITY DESIGN ASSISTANCE	WAY02	40813	7.52	N/A	N/A	100	3	L	32	L+	0.7	2083	VH	87.5	171	VH	11.9	1.7	17.4	0.7	13	0.4	3.1	VH	64.0	L	11.9
COMMUNITY DESIGN ASSISTANCE	WAY03	40814	8.1	N/A	N/A	100	2	L	29	L+	0.3	5042	VH	94.3	175	VH	5.4	3	7	0.1	1.1	0.5	6.9	VH	102.0	L	26.7
COMMUNITY DESIGN ASSISTANCE	WAY04	40815	7.9	N/A	N/A	100	7	M-	69	M	1.1	2819	VH	90.4	160	VH	8.5	5.1	29.8	2.3	65.1	0.7	4.6	VH	77.0	L	15.6
COMMUNITY DESIGN ASSISTANCE	WAY05	40816	7.59	N/A	N/A	100	15	M	93	H-	1.8	2281	VH	87.8	163	VH	10.4	6.2	20.9	1.6	34.4	0.8	11	VH	102.0	L	13
COMMUNITY DESIGN ASSISTANCE	WAY06	40817	8.01	N/A	N/A	100	5	L+	69	M	0.7	4835	VH	93.2	194	VH	6.2	11	13.7	0.3	2.4	0.5	2.5	H	115.0	L	25.9
COMMUNITY DESIGN ASSISTANCE	WAY08	40819	7.21	N/A	N/A	100	3	L	44	M-	1.7	1021	H+	75.5	187	VH	22.8	3.7	15.3	0.9	21.8	0.2	1.4	M	77.0	L	6.7
			Check about wood ashes and lime in high alkaline areas.																								
			Difficult to lower pH. Can buy iron sulfate, but it's a slow process																								
			Can add elemental sulfer in spring. Can be expensive.																								

Notes:

PH:
When a soil is strongly acidic (<5.0-5.5), many herbicides lose effectivness and plant growth is limited by aluminum toxicity.
When soils become alkaline (>7.0), micronutrients, such as maganese and zinc, become less available to plants.

The percent **Acidity** is a ratio of the amount of acid-generating cations (as measured by the Buffer Index) that occupy soil cation exchange sites to the total CEC sites.
The higher this percentage, the higher the amount of reserve acidity in the soil, and the higher the amount of acidity there will be in the soil solution and the lower the soil pH will be.

The percent **Base Saturation** is the ratio of the quantity of non-acid generating cations (i.e., the exchangeable bases, Ca, Mg, and K) that occupy the cation exchange (CEC) sites.

Buffer Index: bph
A Mehlich buffer solution is used to determine the **Buffer Index** to provide an indication of the soil's total (active + reserve) acidity and ability to resist a change in pH.
This buffer measurement is the major factor in determining the amount of lime to apply. The Buffer Index starts at 6.60 and goes lower as the soil's total acidity increases and more lime is needed to raise the soil pH.

Nutrients:
High levels not an issue except for runoff and pollution of waterbodies.

Organic Matter:
Soil **Organic Matter** (SOM) is the percentage by weight of the soil that consist of decomposed plant and animal residues, and is estimated by using either the weight Loss-On-Ignition (LOI method) from 150° to 360°C, or a modified Walkley-Black method.
Soil organic matter levels from 0.5% to 2.5% are ordinary for natural, well-drained Virginia soils. A soil organic matter greater than 3% would be considered very high for a cultivated field on a farm, but can be beneficial.
Due to relatively large amounts of organic materials being commonly added to gardens, the soil organic matter in garden soils can be raised into the range of 5% to 10%.

Soluble Salts:
Soluble Salts (**S.Salts**) or fertilizer salts are estimated by measuring the electrical conductivity of a 1:2, vol:vol ratio of soil material to distilled water.
Injury to plants may start at a soluble salts level above 844 ppm when grown in natural soil, especially under dry conditions and to germinating seeds and seedlings.

Cation Exchange Capacity (CEC):
Estimated Cation Exchange Capacity (**Est-CEC**) gives an indication of a soil's ability to hold some nutrients against leaching. Natural soils in Virginia usually range in CEC from 1 to 12 meq/100g.
A very sandy soil will normally have a CEC of 1 to 3 meq/100g. The CEC value will increase as the amount of clay and organic matter in the soil increases.

Soil texture	CEC (meq/100g soi)
Sands (light-colored)	3 to 5
Sands (dark-colored)	10 to 20
Loams	10 to 15
Silt loams	15-25
Clay and clay loams	20-50
Organic soils	50-100

43

Appendix A: Soil Results

Soil Sample Locations

This image shows the relative location of all the soil samples that were made in the initial site visit.

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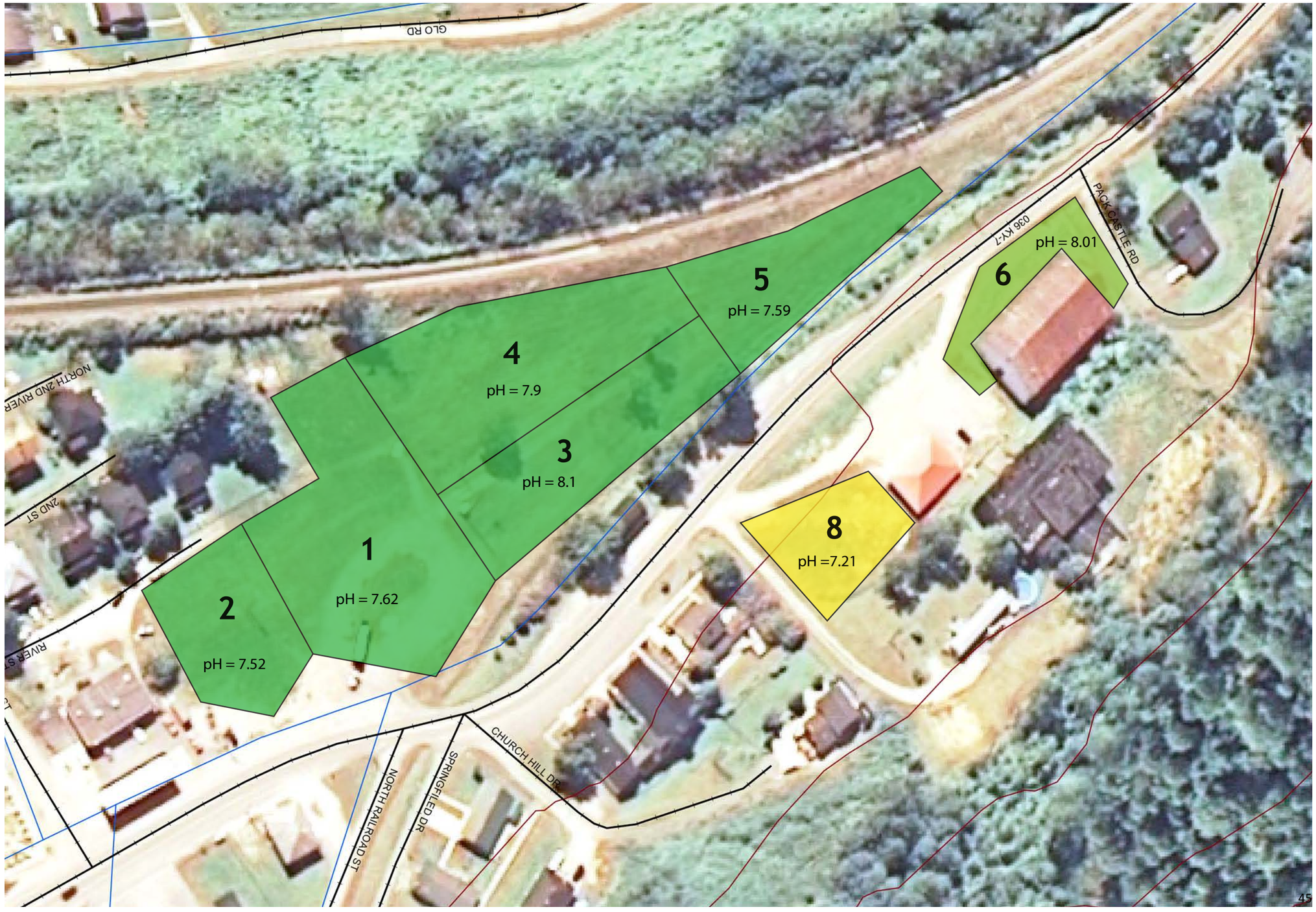
Appendix A: Soil Results

Organic Matter

This image shows the levels of organic matter and pH of each specific sample location.

Organic Levels

- Very High OM
- High OM
- Medium OM



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Virginia Cooperative Extension

PUBLICATION 452-701

Explanation of Soil Tests

Rory Maguire, Extension Nutrient Management Specialist, Virginia Tech
Steve Heckendorn, Soil Test Laboratory Manager, Virginia Tech

The accompanying Soil Test Report (and supplemental Soil Test Notes, when provided) will help you assess your plant's need for fertilizer and lime.

The "History of Sampled Area" section restates the information you filled in on the Soil Sample Information Sheet you submitted with the soil sample.

The "Lab Test Results" section shows the relative availability of nutrients numerically and if appropriate, as a rating. The rating may be interpreted as follows: L=Low, M=Medium, H=High, VH=Very High, EH=Excessively High (soluble salt test only), DEF=Deficient, or SUFF=Sufficient, and sometimes a "+" or "-." When soils test Low, plants almost always respond to fertilizer. When soils test Medium, plants sometimes respond to fertilizer and a moderate amount of fertilizer is typically recommended to maintain fertility. When soils test High to Very High, plants usually do not respond to fertilizer. If there is no rating for a nutrient, the adequacy of that nutrient in the soil for the plant you specified has not been determined.

The following is an explanation of the symbols and abbreviation used in the report:

Report Symbols and Abbreviations

P = phosphorus	K = potassium
Ca = calcium	Mg = magnesium
Zn = zinc	Mn = manganese
Cu = copper	Fe = iron
B = boron	SS = soluble salts
lb/A = pounds per acre	ppm = parts per million
meq = milliequivalent	g = gram
pH = acidity	Sat. = saturation
N = nitrogen	P_2O_5 = phosphate
K_2O = potash	% = percent

Est-CEC = estimated cation exchange capacity

AG = agricultural limestone (dolomitic or calcitic)

Fertilizer Recommendation

The fertilizer recommendations may be used for the same crop for two to three years. After this time, it is advisable to retest the soil to determine if significant changes have occurred in nutrient levels. When the soil tests Very High for phosphorus or potassium and no fertilizer for these nutrients is recommended, you should retest the following year to determine if fertilizer will be needed. Due to the variability associated with sampling, fertilizer application rates may be varied by a plus or minus 10 percent.

No soil test is performed for **nitrogen** because this element is too mobile in the soil for laboratory results to be useful. Nitrogen fertilizer recommendations are based on the crop/plant to be grown, the previous crop, and when applicable, the soil's yield potential. Comments on the report and other enclosed Notes, if any, will have further information regarding nitrogen.

Lime Recommendation

If needed, a lime recommendation is given to neutralize soil acidity and should last two to three years. After that time, you should have the soil retested. The measured soil test levels of calcium and magnesium are used to determine the appropriate type of limestone to apply. If neither dolomitic nor calcitic lime is mentioned, or "Ag" type or "agricultural" limestone is stated on the report, then it does not matter which type is used. When no information on the Soil Sample Information Sheet was provided regarding the last lime application, the lab assumed you have not applied lime in the past 18 months. If this is not correct, contact your Extension agent for advice on adjusting the lime recommendation to take into consideration recent lime applications. Do not over lime! Too much lime can be as harmful as too little. For best results, apply lime, when possible, several months ahead of the crop/plant to be planted to allow time for more complete soil reaction.

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Methods and Meanings

For more detail on the lab procedures used, visit *www.soiltest.vt.edu* and click on "Laboratory Procedures."

Soil pH (or soil reaction) measures the "active" acidity in the soil's water (or hydrogen ion activity in the soil solution), which affects the availability of nutrients to plants. It is determined on a mixed suspension of 1:1, volume to volume ratio of soil material to distilled water.

Virginia soils naturally become acidic, and limestone periodically needs to be applied to neutralize some of this acidity. A slightly acid soil is where the majority of nutrients become the most available to plants, and where soil organisms that decompose organic matter and contribute to the "overall health" of soils are the most active. When a soil is strongly acidic (< 5.0-5.5), many herbicides lose effectiveness and plant growth is limited by aluminum toxicity. When soils are overlimed and become alkaline (> 7.0), micronutrients, such as manganese and zinc, become less available to plants.

For most agronomic crops and landscaping plants, lime recommendations are provided to raise the soil pH to a slightly acid level of between 5.8 and 6.8. Blueberries and acid-loving ornamentals generally prefer a 4.5 to 5.5 pH, and an application of liming material is suggested when the soil pH drops below 5.0. For the majority of other plants, lime may be suggested before the pH gets below 6.0. This is to keep the soil pH from dropping below the ideal range, since lime is slow to react and affects only a fraction of an inch of soil per year when the lime is not incorporated into the soil. If the soil pH is above the plant's target pH, then no lime is recommended. If the pH is well above the ideal range, then sometimes an application of sulfur is recommended to help lower the pH faster; however, most of the time, one can just let the soil pH drop on its own.

A Mehlich buffer solution is used to determine the **Buffer Index** to provide an indication of the soil's total (active + reserve) acidity and ability to resist a change in pH. This buffer measurement is the major factor in determining the amount of lime to apply. The Buffer Index starts at 6.60 and goes lower as the soil's total acidity increases and more lime is needed to raise the soil pH. A sandy soil and a clayey soil can have the same soil pH; however, the clayey soil will have greater reserve acidity (and a lower Buffer Index) as compared to the sandy soil, and the clayey soil will require a greater quantity of lime to be applied in order to raise the soil pH the same amount as the sandy soil. A reported Buffer Index of "N/A" means that it was not measured since the soil (water) pH was either neutral or alkaline and not acidic (soil pH ≥ 7.0) and therefore requires no lime.

Nutrients that are available for plant uptake are extracted from the soil with a Mehlich 1 solution using a 1:5 vol:vol soil to extractant ratio, and are then analyzed on an ICP-AES instrument. An extractable Mehlich 1 level of phosphorus from 12 to 35 pounds per acre (lb/A) is rated as medium or optimum. A medium level of potassium is from 76 to 175 lb/A. Medium levels of calcium and magnesium are 721 to 1440 and 73 to 144 lb/A, respectively. Calcium and magnesium are normally added to the soil through the application of limestone. It is rare for very high fertility levels of P, K, Ca and Mg to cause a reduction in crop yield or plant growth. Levels of micronutrients (Zn, Mn, Cu, Fe and B) are typically present in the soil at adequate levels for plants if the soil pH is in its proper range. See Soil Test Note 4, at *www.soiltest.vt.edu/stnotes*, for documented micronutrient deficiencies in Virginia.

Soluble Salts (**S.Salts**) or fertilizer salts are estimated by measuring the electrical conductivity of a 1:2, vol:vol ratio of soil material to distilled water. Injury to plants may start at a soluble salts level above 844 ppm when grown in natural soil, especially under dry conditions and to germinating seeds and seedlings. Established plants will begin to look wilted and show signs related to drought. This test is used primarily for greenhouse, nursery and home garden soils where very high application rates of fertilizer may have led to an excessive buildup of soluble salts.

Soil **Organic Matter** (SOM) is the percentage by weight of the soil that consist of decomposed plant and animal residues, and is estimated by using either the weight Loss-On-Ignition (LOI method) from 150° to 360°C, or a modified Walkley-Black method. Generally, the greater the organic matter level, the better the overall soil tilth or soil quality, as nutrient and water holding capacities are greater, and improved aeration and soil structure enhance root growth. The percent of organic matter in a soil can affect the application rate of some herbicides. Soil organic matter levels from 0.5% to 2.5% are ordinary for natural, well-drained Virginia soils. A soil organic matter greater than 3% would be considered very high for a cultivated field on a farm, but can be beneficial. Due to relatively large amounts of organic materials being commonly added to gardens, the soil organic matter in garden soils can be raised into the range of 5% to 10%.

The remaining values that are reported under the "Lab Test Results" section are calculated from the previous measured values and are of little use to most growers.

Estimated Cation Exchange Capacity (**Est-CEC**) gives an indication of a soil's ability to hold some nutrients against leaching. Natural soils in Virginia usually range in CEC from 1 to 12 meq/100g. A very sandy soil will normally have a CEC of 1 to 3 meq/100g. The CEC value will increase as the amount of clay and organic matter in the soil increases. This reported CEC is an estimation because it is calculated by summing the Mehlich 1 extractable cations (Ca + Mg + K), and the acidity estimated from the Buffer Index and converting to units commonly used for CEC. This is also an Effective CEC since it is the CEC at the current soil pH. This value can be erroneously high when the soil pH or soluble salts level is high.

The percent **Acidity** is a ratio of the amount of acid-generating cations (as measured by the Buffer Index) that occupy soil cation exchange sites to the total CEC sites. The higher this percentage, the higher the amount of reserve acidity in the soil, and the higher the amount of acidity there will be in the soil solution and the lower the soil pH will be. A reported Acidity% of "N/A" means that a buffer index was not determined, and the acidity is probably less than 1 meq/100g and/or 5%, and the soil pH is alkaline (greater than 7.0).

The percent **Base Sat**uration is the ratio of the quantity of non-acid generating cations (i.e., the exchangeable bases, Ca, Mg, and K) that occupy the cation exchange (CEC) sites.

The percent **Ca, Mg, or K Sat**uration refers to the relative number of CEC sites that are occupied by that particular nutrient and is a way of evaluating for any gross nutrient imbalance.

Additional Information

For questions and more information, contact your local Virginia Cooperative Extension (VCE) office or go to *www.ext.vt.edu*. Contact information for your local Extension office appears on the upper left of your soil test report.

Conversion Factors

(Some Values are Approximate)

1 acre = 43,560 square feet

1 pound of 5-10-5, 5-10-10 or 10-10-10 fertilizer = 2 cups

1 pound of ground limestone or ground dolomitic limestone = 1.5 cups

1 pound of aluminum sulfate or magnesium sulfate = 2.5 cups

1 pound of sulfur = 3.3 cups

1 quart = 2 pints = 4 cups

1 pint = 2 cups = 32 tablespoons

1 tablespoon = 3 teaspoons

1 bushel = 35.24 liters = 1.25 cubic feet

Pounds per 100 square feet x 0.54 = lbs per cubic yard

100 square feet = 5 feet x 20 feet, 10 feet x 10 feet, or 2 feet x 50 feet

1,000 square feet = 50 feet x 20 feet, 10 feet x 100 feet, or 25 feet x 40 feet

Pounds per 100 square feet x 436 = pounds per acre

Pounds per 1,000 square feet x 43.6 = pounds per acre

Pounds per acre x 0.0023 = pounds per 100 square feet

Pounds per acre x 0.023 = pounds per 1,000 square feet

Appendix B: Plant Lists

Trees

Common Name	Botanical Name	Quantity
1. American Elm 'Valley Forge'	*Ulmus americana 'Valley Forge'*	2
2. American Hophornbeam	*Ostrya virginiana*	1
3. American Hornbeam	*Carpinus caroliniana*	1
4. American Linden	*Tilia americana*	5
5. Amur Maackia	*Maackia amurensis*	3
6. Amur Maple	*Acer ginnala*	10
7. Burr Oak	*Quercus macrocarpa*	5
8. Chinese Elm	*Ulmus parvifolia*	2
9. Chinkapin Oak	*Quercus muehlenbergii*	1
10. Colorado Blue Spruce 'Sester's Dwarf'	*Picea pungens 'Sester's Dwarf'*	1
11. Crape Myrtle	*Lagerstroemia*	2
12. Dawn Redwood	*Metasequoia glyptostroboides*	3
13. Dogwood 'Appalachian Spring'	*Cornus florida 'Appalachian Spring'*	7
14. Downy Hawthorn	*Crataegus mollis*	2
15. English Oak	*Quercus robur*	1
16. European Hornbeam	*Carpinus betulus*	1
17. Gingko	*Ginkgo biloba*	3
18. Hackberry	*Celtis occidentalis*	2
19. Honey Locust	*Gleditsia triacanthos*	2
20. Winterberry 'Jim Dandy'	*Ilex Verticilata 'Jim Dandy'*	1
21. Winterberry 'Red Sprite'	*Ilex Verticilata 'Red Sprite'*	3
22. Japanese Tree Lilac	*Syringa reticulata*	5
23. Japanese Zelkova	*Zelkova serrata*	2
24. Katsura	*Cercidiphyllum japonicium*	1
25. Kentucky Coffeetree	*Gymnocladus dioicus*	1
26. Meyer Lilac	*Syringa meyeri*	1
27. Paw Paw	*Asimina triloba*	1
28. Persian Parottia	*Parrotia persica*	4
29. Redbud	*Cercis canadensis*	7
30. Redbud 'Forest Pansy'	*Cercis canadensis 'Forest Pansy'*	2
31. Red Horse Chestnut	*Aesculus x carnea*	1
32. Redtwig Dogwood 'Allemen's Compact'	*Cornus sericea 'Allemans'*	2
33. Smoketree	*Cotinus coggygria*	3
34. Sweet Shrub	*Calycanthus floridus*	1
35. Tulip Poplar	*Liriodendron tulipifera*	1
36. Turkish Filbert	*Corylus colurna*	3
37. Washington Hawthorn	*Crataegus phaenopyrum*	1
38. Yellowwood	*Cladrastis kentukea*	4

Appendix B: Plant Lists

Shrubs

Common Name	Botanical Name	Quantity
1. Button Bush	*Cephalanthus occidentalis*	12
2. Rose of Sharyn	*hibiscus syriacus*	4
3. Hydrangea	*Hydrangea macrophylla*	10
4. Myer Lilac	*Syringa meyeri*	1
5. Spotted Laurel	*Aucuba japonica*	8
6. Sweetshrub	*Calycanthus floridus*	1
7. Viburnum	*viburnum dentatum*	4
8. Viburnum 'Christom' Blue Muffin	*Viburnum dentatum 'Christom' Blue Muffin*	12
9. Winterberry 'Jim Dandy'	*Ilex Verticilata 'Jim Dandy'*	1
10. Winterberry 'Red Sprite'	*Ilex Verticilata 'Red Sprite'*	3

Appendix B: Plant Lists

Grasses

Common Name	Botanical Name
1. Kentucky 31 tall fescue	*Festuca elatior*
2. Little Blue Stem	*Schizachyrium scoparium*
3. Eastern Gamagrass	*Tripsacum dactyloides*
4. Heavy Metal Switchgrass	*Panicum virgatum 'Heavy Metal'*

Herbaceous Plants

Common Name	Botanical Name
1. Cardinal Flower	*Lobelia cardinalis*
2. Swamp Milkweed	*Asclepias incarnata*
3. Goldenrod	*Solidago rugosa*
3. Blue Star	*amsonia tabernaemontana*
4. Ironweed	*Vernonia noveboracensis*

Rushes/Sedges

Common Name	Botanical Name
1. Toad Rush	*Juncus bufonius L.*
2. Fox Sedge	*Carex vulpinoidea Michx.*
3. Dark Green Bulrush	*Scirpus atrovirens*
4. Common Rush	*Juncus effusus L.*

Note: The rushes,sedges, herbaceous plants, and grasses (except Kentucky 31) are plants to be used in and around the stormwater managment areas. These plants are wet soil tolerant and are commonly used in stormwater management practices. They are also good for improving ecosystems (birds and insects), as well as gowing rapidly.