



Town of Gray
Planning Board Agenda
October 8, 2020

Regular Meeting

Henry Pennell Municipal Complex

7:30 PM

24 Main Street, Gray, ME 04039

I. Meeting Commences

II. Board Business

- a. Consideration of Election of New Chair

III. Minutes Approval

- a. Planning Board - Regular Meeting - Sep 10, 2020 7:00 PM
- b. Planning Board – Regular Meeting – August 13, 2020 7:00 PM

IV. Information Exchange

- a. Chestnut Heights Cistern Relocation
- b. Potential Planning Board & Town Council Workshop

V. Old Business: Public Hearing

- a. Yarmouth Road Pocket Park

A request by the Town of Gray for Conditional Use and Site Plan Review for improvements to create a public pocket park to be located at 5 Yarmouth Road, Tax Map 43, Lot 405-23 in a Village Center Proper Zoning District.

VI. Adjournment

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ACTION ITEM (ID # 5294)

Consideration of Election of New Chair

HISTORY:

09/10/20 Planning Board

Dan Cobb asked to table this until they know about possible reappointment of Don.

No true motion second but Abrams said ok with him.

Dobb/Abrams - tabled



ACTION ITEM (ID # 5241)

Yarmouth Road Pocket Park

A request by the Town of Gray for Conditional Use and Site Plan Review for improvements to create a public pocket park to be located at 5 Yarmouth Road, Tax Map 43, Lot 405-23 in a Village Center Proper Zoning District.



**PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE**

5.a.a

PROPERTY TO BE DEVELOPED

Property Location/Address	5 Yarmouth Rd	Property Map/Lot	043 .406 .023 .000
Zoning District	Village Center Proper	Lot Acreage	.2 +/-
Owner Name	Town of Gray	Tax Sheet	43
Owner Address	24 Main Street	Owner Phone	207-657-3339

APPLICANT

Name (IF different than owner)	N/A	Contact Phone Number	
Mailing Address		Alternate Phone Number	
Mailing City/State/Zip		Fax Number	
Email Address			

AGENT/CONSULTANT

Name	Rachel Lyn Rumson/permaculture design	Contact Phone Number	207-332-7224
Mailing Address	G-P/Peer Review	Alternate Phone Number	207-772-2515
Mailing City/State/Zip		Fax Number	
Email Address			

PROJECT

The undersigned requests that the Town of Gray Planning Board consider the following application for:

<input type="checkbox"/> Subdivision Sketch Plan Review Preliminary Plan Review (Major) Final Plan Review (Major) Minor <input type="checkbox"/> Site Plan Review Pre-Application Conference Minor <input checked="" type="checkbox"/> Major <input type="checkbox"/> Shoreland Zoning Permit	<input checked="" type="checkbox"/> Other (specify) Conditional Use Amendment Extension Workshop Contract Zone Request Conditional Use
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Project Description / Comments:

This project is to create a pocket park at the Town-owned property located at 5 Yarmouth Road. Goals are to eliminate cut through traffic, manage stormwater, add historical marker, create green space in village, provide additional seasonal village parking.

Applicant Signature Kathy L. Tombarelli	Date 7-22-2020
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Attachment: Planning Board Staff Review Application _ Town of Gray Maine_5 Yarmouth Rd (5241 : Yarmouth Road Pocket Park)

Draft Conceptual Design
For The Town of Gray, Maine



Route #115/ 5 Yarmouth Rd/ Greenleaf St
Gray, Maine

Latitude: 43.885358° (43°53'7.28792"N)
Longitude: -70.329746° (70°19'47.08415"W)
Elevation: +308 ft
Magnetic Declination: -15.12°

Prepared by:
Rachel Lyn Rumson
207Permaculture.com
8 George Perley Rd
Gray, Maine 04039
October 2018

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

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Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

Introduction

Background

In 2013 there was a conceptual plan drawn up for the Hancock Block. One of the themes presented was that the property owners on the block wanted more parking and green spaces. In the year 2016 the Town of Gray acquired the land and it was graded.

In 2019, members of the Gray Community and Economic Development Committee (CEDC) included this site in village beautification targets, and sought immediate restriction of passthrough traffic on the site. The Town Planner led on a site walk in October 2019 for members of CEDC. Other community stakeholders were in attendance from the Congregational Church and Gray Historical Society. Ideas for the site that emerged then were: green space, public seating, parking, pollinator gardens and a pantry garden, edible landscapes, tree canopy and hedgerows for screening traffic.

Subsequently, the Planner called a landscape architect to discuss the location and review past conceptual plans drawn for the location. The designer of this plan also attended. Since then Public Works has been discussing plans to impede passthrough traffic. The Town Council was presented a draft of the idea. They gave feedback on the conceptual plan and approval to proceed. Since then the Town Planner has successfully funded the project through a Community Development Block Grant is pursuing a block grant for planning.

Design Goals

The design goals for this site are to create a place of natural and local interest. A common gathering place for the community and travelers alike where people can convene. It provides a positive outdoor space with shelter in the middle of Gray. It was a vegetative buffer from the traffic and asphalt. Birds forage and people picnic there. Visitors grab a stretch, take a stroll, or have a conversation.

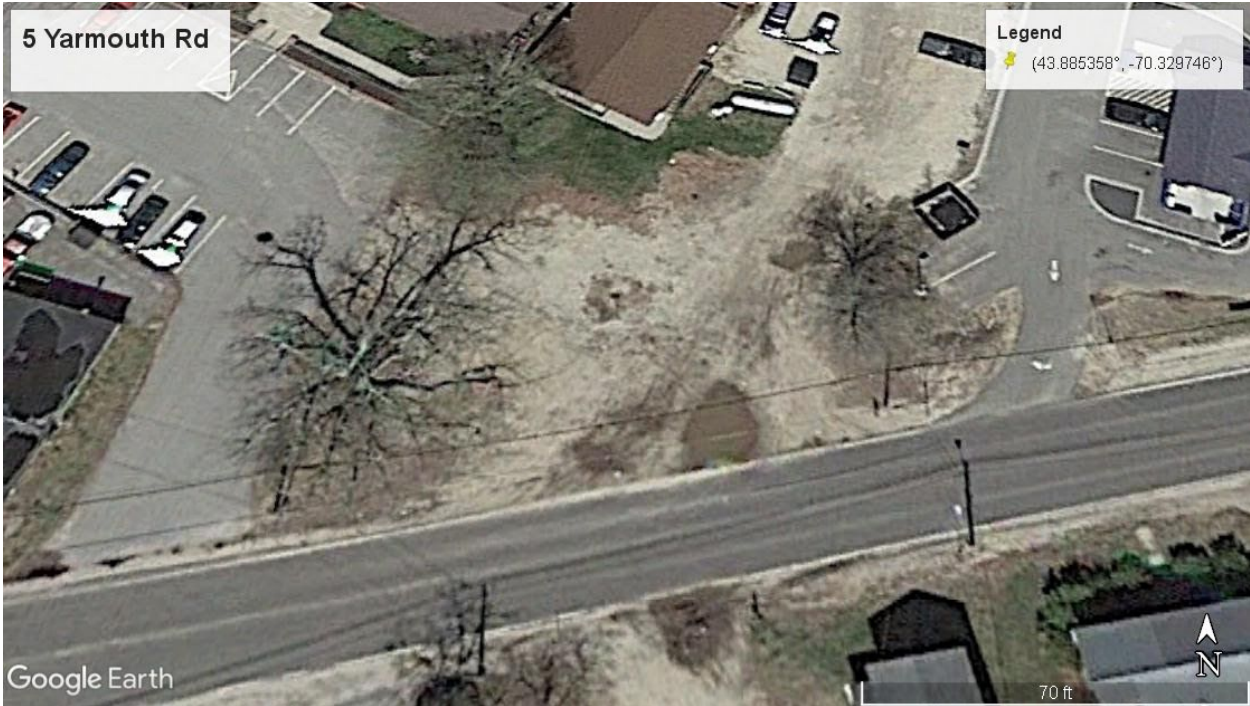
In the context of trends in the region, it should have edible landscape features, eliminate stormwater runoff, provide pollinators with a diverse supply of nectar, restore the village tree canopy, and encourage community engagement through implementation and maintenance. As a prominent spot in the village center, it should be a beautiful, welcoming, accessible, safe, and shaded gathering place.

Modivations

This conceptual plan and narrative attempts to achieve our design goals by using a dynamic ecological design process known as permaculture design. This approach allows for

participatory design in refining the goals, connecting with stakeholders in the community, choosing an aesthetic for various features, and integrating public safety measures.

Site Summary



The site is a 0.3-acre lot in Gray, Maine. It is one-quarter of a mile from the Maine Turnpike I95 and is surrounded by traffic, parking lots, and businesses. The plot was formerly a residence that was raised; however, all foundations and vegetation have since been removed. The parcel of land is situated in the Hancock Block in the Village Historic District. It is in a census designated area where 56% of the 803 residents in the track are low/moderate income households.

The site is situated approximately 300 feet above sea level and was cleared and graded within the past decade. It is relatively level today, with pits from erosion and vehicle pass-through. The lot is exposed to heavy solar loads, weight loads, and strong winds. It is compacted and desertified.

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

Initial Site Analysis & Assessment

The trend of the plot land is graded within a very slight slope descending south and southwest toward a storm drain. Relevant site details pertinent to this design are below. Engagement with people on the committee and in the community regarding the site is recommended.

Site History

Historical USGS maps and satellite images suggest that the site has been settled for the past 200 years. The site may have been raised by fire several times in the French and Indian War. The site has been subjected to severe disturbance during recent clearing and excavation.

Climate

Average Annual Precipitation: Average annual precipitation is 48 inches/year and the average monthly precipitation is at least 3.5 inches/month throughout the growing season. Historically, on average, there is a lull from July to August ranging from 3.31 to 3.15 inches each month (All of which can fall in a single rain event). [1] However, 5 inch rain events are common, more recently. Each year there is more than 244,236 gallons of rainfall on the site, not including the impervious services up-slope that may drain into it. Recommendations and considerations for the site include:

- Irrigation will be necessary in average years to establish plantings. Both increasing water storage in the soil and adding rain barrels will benefit installation and maintenance. Harvesting rainwater during warmer months will support plantings with minimal cost.
- It is necessary to plan for the likelihood of increased variation in precipitation conditions given forecasted climate chaos. Stronger and more intense rainstorms in shoulder seasons, as well as longer and deeper droughts in the middle of the growing season, are both likely in this region.

[1] From <https://www.usclimatedata.com/climate/brunswick/maine/united-states/usme0056>, accessed Sept 31, 2019.

This site must be designed for increased holding capacity, drought tolerance, and erosion control. Earthworks such as swales, cut slightly off contour, are recommended as well as improving organic matter content in soils and using layers of organic mulch.

- Design for increased runoff retention/purification/infiltration on this site.

USDA plant hardiness zone: 5b (-15 to -10F)¹

Arbor Day plant hardiness zone: 5 and 6 (0 to -20)²

- Site is close to a solid, consistent zone 6. The design must be prepared for a general warming trend in future but with punctuated cold events. As Casco Bay continues to warm, the zone will become a 6b - 6a.

Average annual wind speed: 7 mph.³ Peak wind in spring months of March and April at 6 mph prevailing North Northwest (337degrees) on average.

Prevailing Winds: A nearby data source indicates prevailing winds are north-northwest.⁴ Strongest gusts are from the northwest from December through March. However, in Oct 2019 the site saw the sixth strongest wind gust since records began. Warm Summer winds tend to be southerly during the growing season.⁵

- Current windbreak protection for this site consists of a building on the Northwest. The North is mostly unprotected. Trees will need support while being established. Wind Speeds may accelerate through and around the buildings.
- Area topography suggests no significant elevation changes nearby to protect this site from strong gusts. Wind-sensitive crops, especially fruits, should be carefully sited and not left unprotected.
- Design for soil wind erosion protection. Seven layer forest systems recommended.
- The site is not well protected from strong summer winds either. Mitigate traffic fumes filling the site with dense tall hedges.

Landform

Ecoregion: This site sits in an urban environment. To the north of the site is no tree canopy. The gently rolling irregular plains and a scattering of shallow lakes nearby (and throughout

¹ From <http://planthardiness.ars.usda.gov/PHZMWeb/#>, accessed Sept 31, 2019.

² From <https://shop.arborday.org/LookUp.aspx?nursery=false&zipcode=04039>, accessed Sept 31, 2019.

³ From <https://www.timeanddate.com/weather/usa/portland-me/climate>

⁴ From <http://www.erh.noaa.gov/avnclimo/index.php?tab=State>, accessed Sept 31, 2019.

⁵ From <https://www.wcc.nrcs.usda.gov/ftpref/downloads/climate/windrose/maine/portland/>, accessed Sept 31, 2019

central Maine) have elevation mostly under 300 feet. They are formed by Maine sedimentary rock⁶, and an extensive covering of glacial till and outwash plain deposits.⁷

Parent material is mostly clay and silt. To the south is coastal marine forest and lower elevation, and Casco Bay. Underlying bedrock and sand plays a role in the character of the region with ledge poking out of topsoil and vast sand deposits that are currently mined.

Elevation: Approx 308 feet. There is a minuscule rise to the northeast and to the west. Measurement is needed to maximize water distribution. There is nothing over 300 ft above sea level for some distance.

Plot slope aspects: Relatively flat field topography in the area. Trend gradually lowers toward the West. The northeast corner is the highest point on the site with impervious surfaces located there. The west also presents a high point with level impervious surfaces there as well.

Plot Soils: Soil surveys in the past ruled the site favorable for septic construction. Soil testing is recommended. Soil type appears to be loamy clay. Percolation rates in that soil type are sufficient at 1/10 inch/hour. Presently, the land has zero capacity to catch or store water; there is no chance for percolation due to the compaction. Compacted earth makes up 95% of the area.

The soil is also biologically dead. There is visibly no organic matter in the soil to support plant life. There are marginally better soils around the Silver and Sugar Maples near the site. A soil test would provide broader analysis beyond observation. That said, soil building recommendations are below.

- Thick mulch layers are recommended to enliven the soil and increase its productive capacity. Consistent moisture will also assist in strengthening the biological activity of these soils.
- When planting, the holes should be dug 3-5x bigger for amendments to be added with the root ball. Compost material, mycorrhizae, rock dust, bone and blood meal should be added at that time. For trees, and shrubs, some water soluble fertilizer specifically for fruiting plants can also be added at the time of planting. If significant clay presents, go 5x and look at berms and drainage swales at terraces.
- When planting trees and shrubs it is recommended that bare-root plant material be used, as the soil around the roots will be so much different than existing soil. (This could lead to root binding in the planting hole.)

Water

⁶ From <http://www.maine.gov/dacf/mgs/explore/bedrock/faq.htm#q3>, accessed Sept 31, 2019

⁷ From <http://www.landscape.org/>, accessed Sept 31, 2019

Watershed: This site is part of Gray Water District's Wellhead One, and it drains into the Presumpscot River watershed and into Casco Bay.

- The land will likely be dry, as it is unprotected from the sun all day. Moisture will evaporate readily in the afternoon with full sun and wind exposure.

On-Site Water Resources: There are significant impervious surfaces up-slope of this plot and there is a well for water.

- To slow and sink water flow through the landscape and maximize its availability for plantings, earth works are needed. Permeable paths and parking are suggested. Additional impervious surfaces are not recommended.
- Mulches with high carbon content will increase the capacity of soils to hold moisture for drought resistance.
- A secure 500 gallon rain barrel at a higher elevation set above ground in the shade can also serve to establish vegetation, water gardens and replenish any water features.

Sun

There is good sun exposure **during the** summer – approximately 10 hours. **Throughout the winter months**, there is 6-7 hours of sun exposure. **In the fall and spring, eight hours of direct sunlight hits the plot.** Considerations regarding sun on this site:

- From early morning to late afternoon, the site is in full sun and has a hot microclimate. Watering needs to **occur** in the morning or evening during the summer.
- Provide shade for seating.
- Consider season extension for a pantry garden to boost yield.

Vegetation and Wildlife

Potential Natural Vegetation: : This region was historically dominated by a combination of Central Interior and Appalachian, Laurentian-Acadian Floodplain Forest. **There is** some combination of silver, red and sugar maples, green ash, American elm, black willow, pines, aspens, spruces, balsam fir, eastern hemlock, alder, and transition hardwoods. **Due to** climate change, this region will transition to a hardwood forest of predominantly hickory and oak. Pines and maples **will suffer due to changes in climate and precipitation in the future.**

Existing Vegetation

There is largely no existing vegetation presently on the site. However there is an existing single senescent Silver Maple standing over the west property line. Two Sugar Maples to the Northwest canopy the site from an adjacent lot and one on the East, with Aspen, Beech, Autumn olive and Black Locust in the understory. **There is an active** fungal layer. Nearby

properties feature Black Locust, Linen and Mountain Ash, some conifers, Lilacs, Rhododendrons to the south. Rosa Rugosa shrubs are also in the neighborhood. Revegetation might include:

- Add plantings in all seven layers of the forest garden. Canopy and understory trees, shrubs, herbaceous plants, vines and ground covers will transform this site into a sanctuary for humans, pollinators and wildlife.
- Using vegetation that is already in the landscape nearby would create some continuity with the surroundings.
- The site could make use of the locust that is there for a natural visual screen for traffic. Locust also can be managed to yield very rot resistant pole material on a 5 year cycle as well. (Locust has the highest BTU rating as well and is underutilized regionally due to the hardness after it has been cut.) Using vegetative screening from traffic will improve seating as well.

Pest/Varmints: We did not observe any pests or varmints however there are rat traps set on the nearby property. Groundhogs, foxes, sea birds, hawks, and lots of pollinator species expected in the vicinity, as are mice and voles. Protection from these animals will ensure plants are established. Protections from humans is also a consideration.

Site Assets & Challenges Summary

Site Assets

- Solar window of 9 hours of sun in the summer
- Integral Village location
- 47 - 50 inches of rain each year

Site Challenges

- Lack of vegetation
- Soil compaction
- Traffic
- Sun and wind exposure
- Minimal topographical variation
- Irrigation sources

In our assessment, the essential strategies to restore this site's capacity to sustain a revegetation effort are managing water in the landscape with intensive earthworks and soil building including heavy mulches, and calculated soil amendments.

Essential Strategies

Water in the Landscape

Earthworks: Carve subtle terraces, or swales in the compacted soil. This will slow, sink and direct water in this landscape forming a passive irrigation system. Build berms with displaced

soil down slope and use soil building methods below. Plant these beds densely with diverse perennial forest layers. Overfill dug portions of the swale with wood chips, or alternately, design permeable-pathways stone layers and pavers. (See *Appendix A for Earthworks Plan and Appendix B for detailed perspectives on earthworks.*)

Soil Building

Sheet mulching: Build up the soil with the sheet mulch method. Patches or sections can make the task more feasible, if working over time or with several volunteers. This can be done in 28 to 32 inch thickness and can be layered directly on the ground.

- Implementing layers of sheet mulch (See *Appendix C for sheet mulch recipe*) composed of materials such as seaweed, leaf mold, grass clippings, and straw (or mulch hay), on top of cardboard (to provide spring weed/seed germination block this fall.)

Soil Amendments: Soil testing is recommended. However, even without soil tests some recommendations can be made based on permaculture best practices.

- Some mineralization will occur with densely planted, multifunctional polyculture and perennial polycultures as in this design.
 - Nitrogen-fixing plants are a necessity in this soil and will also likely improve soil biology and decomposition potential. Consider Pea shrub, lupins, seaberry, red clover, black locust and birdsfoot trefoil. Nature will tend to fill this niche with vetch, field pea, sweet fern, locust and clover.
 - Dynamic accumulator plants will help to mitigate hard pan and draw trace minerals from the subsoil to the surface for nutrient cycling. Comfrey, dandelion, daikon radish are considered. Nature will tend to fill this niche with docks, dandelions, plantain, and wild carrot. It is recommended to leave leaf drop on the ground to assist in soil development.
 - Fast growing green mulch plants are recommended as ground cover in early succession, as other plants are establishing, or layer with hot compost to feed buckwheat, bulbs, alliums to fill in between plantings species is also recommended.
- The site is approximately 13,000 square feet. The following amendments are recommended:
 - Organic matter: increase by 10% using sheet mulch methods
 - Kelp: Apply liberally, up to 400 lbs per acre
 - Bone Meal and Bloodmeal, apply liberally
 - Goat, chicken or cow manure, apply liberally
 - Rock Dust: apply liberally (We recommend granite, marble or basalt dust)
 - Rock Phosphate in holes for tree plantings.

Materials

Materials Depot: The site is currently a highly visible open space with no clear place to drop off materials. A location must be designated for a material depot to ensure materials are

delivered to the correct place. Ideally, this location will be strategically placed to avoid moving materials before they can be used. The material depot will accumulate piles of seaweed, leaves, cut grass, and wood chips and straw. (See Appendix D for material sourcing.) It does not need to be sheltered but it may be good to have a pen of some kind for it. Both the side of the property abutting the municipal parking lot (currently used as snow storage) and the cut through to Brown Street are recommended as a material drop locations.

Design Options and Considerations

Outlined below are several design options and considerations. Please see Appendix F for the Forest Garden Plant List and Appendix G for Conceptual Plan.

Edible Hedges: A hedgerow frames the space parallel to the road and functions as a traffic screen. Another hedgerow edges the northeast border of the property. The south hedge is planted with Siberian Pea Shrub, Seaberry, beachplum, honey berry, black locust (existing), sea rose, hawthorn, cornelian cherry, red bud, forsythia, ornamental grasses and digitalis. It is set back from the road to protect it from snow pressure. A low-standing brick wall with a granite cap could complement it in the future. Comfrey lines the road before it. The tallest plants in this row at maturity are black locust, redbud and cornelian cherry. The redbud is placed in the east, and the cherry beside it. The locust is already in the west. Height of the hedge will be maintained at 7-8 feet after maturity.

The north hedge is hazelnut, seaberry, forsythia, lilac and willow with comfrey and strawberry south of the stand. There is a 4-6' wide gate in this hedge and that serves as a formal pedestrian gateway.

Silver Maple Polyculture: The area of ground surrounding the Silver Maple to its drip line is amended with sheet mulch methods and planted with a mix of beach plum, nannyberry, sea kale, lupins, asters, comfrey, mouse garlic, garlic chives, daffodils, and black-eyed susans.

English Walnut Polyculture: Walnut produces nuts and provides shade. The walnut produces the chemical juglone, an herbicide for many other plants. As interpreted in this polyculture, the following do well with walnut: mulberry, elderberry, goumi, and goji. Because of this, the walnut is planted in the eastern most corner, bordered by asphalt, mulberry, and goumi. The mulberry and goumi create a buffer, protecting other plants from the effects of juglone.

Shagbark Hickory Polyculture: A nut bearing canopy tree after several years, the planting of the hickory is meant to serve as a future shade provider. It's understory is planted with seckel pear, nannyberry, yarrow, allium, calendula and bee balm is placed near the seating area, filling the central position in the southern half of the lot.

Pollinator beds: Swale berms and beds around the pavillion will be planted with a diverse selection of pollinator species including echinacea (coneflower), hyssop, various allium, yarrows, beebalm, heather, seakale, lavender, lilies, chamomile, lemon balm and a witch hazel in a shadier corner (NW). Annual plantings of sunflower, buckwheat, red clover and hungarian poppy will fill in the bed in the years of establishment.

Features:

Permeable Parking/Patio: Meant to optimize water for passive irrigation on the site, reduce runoff, and provide drought resistance. The permeable parking/patio will be a parking stormwater sink or dry well system.

In the center of the site is a round patio seating area that drains most of the rainwater on the site. There is an overflow to the storm drain on Yarmouth Road. In the southeast lot there is space for four cars in a single row with an aisle. To mitigate salt contamination of soils, the lot must be closed during the winter months. The curb cut should be aligned with the driveway across the street on Yarmouth Road.

Swales & Berms: Swales slow and sink rainwater into the landscape. Swales are dug to channel rainwater. Berms create contours that direct rain water slowly through the landscape, to the swales and eventually to larger permeable dry wells. Swales are imperative on this site to support plant growth. Install the earthworks scheme and soil building recommendations before planting beds.

Knee-wall barriers: Line the road side and parking areas with hedgerow plantings. Place knee-wall within the offset, with space for four cars end-to-end on the road. Materials are not defined in the design. Boulders, wooden barriers and pavers have all been discussed with the Public Works Department. There is an opportunity to consider mosaic art and wall lighting in this design as well.

Pollinator Pavillion: This is a sheltered area with seating underneath that is to be surrounded by a diverse pollinator garden. The permeable patio creates a surface for tables. Low-mow blend patches of grass are installed nearby as well.

Pantry Garden: The Pantry Garden is a community garden supporting the Gray Food Pantry. It qualifies for both grant and crowdfunding if collaborating with community organizations. The Parks and Recreation Department is interested in helping maintain a garden there with the participants in their program. The area consists of six cedar or hemlock boxed raised beds and two ADA accessible beds. There is also a small tool shed and rain barrel with a platform.

Historical Marker: Gray Historical Society has a kiosk project and will place a historical marker on the site facing west. It would be an ideal location for sunset viewing in the park as well.

Suggested Design Implementation Sequence

This implementation plan is a five phase trajectory, and should proceed as time, money, and energy allow.

Phase 1: Site Preparation

Earthworks will involve cutting swales and terraces, with a 6-way and excavating at least one rectangular parking area as outlined below. Finally, while machinery is onsite, also dig holes for large tree plantings and permeable parking and patio dry wells. (See Appendix A & B for construction detail.)

- 1) Swales on contour. This step involves digging two-three shallow swales slightly off contour (marked) across the site in a smile-pattern from west to east (from the town parking lot to about 20 feet short of the eastern corner.) The cuts should be 3 feet wide at a depth of 8-10 inches. The displaced earth mounded south of the cuts will create low berm. In the berms punky wood will be buried. Berms will be planted and the area will be passively irrigated. Cut portions of the swale will be overfilled with wood chips, or a permeable-pathways designed with 3/4ths inch clear rock. Berms will be covered with an additional 28 inches of organic material using sheet mulch methods.
- 2) Permeable parking. This area requires excavation of a rectangle (27' x 32') dug to 36 inches with a shelf (3'-4') surrounding that dug to 21 inches. Dig the shelf to be sloped slightly back from the well to the wall.

The deeper hole is filled to a 12 inch depth with 1 1/2 inch clear rock, followed by a 4 inch depth of 3/4 inch clear rock, then 18 inches of 3/8 inch clear rock. (See Appendix B.) The edges are installed with stamped concrete to hold the system in place. Finally the pavers are laid and more 3/8" clear rock is swept into the cracks.

- 3) Major tree planting holes are dug to 20 inches. Dirt can be replaced and hand dug later for amending and planting. This includes the site for the hedgerows, the walnut and hickory.
- 4) Barriers. Public Works has a budget for fencing. Final design is pending boundary revisions.
- 5) Community/Pantry Garden. This area will need to be graded for later design and development.

After Earthworks, mulching and cover-cropping the bare soil is essential. This can be done in the spring or fall.

- 1) Soil work can begin by depositing mulch materials on the site. Mulching can occur in sections or done all at once. By depositing mulching materials on site in piles, volunteers can spread it by bucket and barrow. Most plant material will be available in the spring. Berms
- 2) Placing what are taller trees in the north of the others benefits all the plants in the system by maximizing solar resources and creating beneficial microclimates. After planting the canopy tree crops, and building supports and protection for them there is room to make adjustments to the planting scheme. Plantings should be placed to fill ecological niches.

Phase 2 and 4

Define edges and pathways. Order plantings and plant vegetation according to the planting scheme.

Project Management Tables

Phase 1: Site Preparation

Description	Notes	Budget/Financial
Earthworks (See Appendix A & B.)	Town excavation may be good enough.	tbd
Early soil development: mulching and cover crops	<p>Mulch with at least a 4 inch thick top layer of wood chips where the trees are to be planted. Can set for 2-3 seasons.</p> <p>Sow cover crops on bare earth to build soil. *see resource section for more info.</p> <p>Collect seaweed straw, grass clippings, leaves</p>	tbd
Stake out planting areas for trees and shrubs.	Gather flagging tape and sturdy stakes, place them in	tbd

	the location where larger plants will be planted.	
Sheet Mulch	Cover berms and hedgerow locations with material. This can set over winter. Or be done in the spring.	tbd

Phase 2: Define Access and Edges

Order plants and seeds	Fedco Trees and Edgewood Nursery are great sources.	\$990
Stake out project areas and place signage	Historical Marker, Panty Garden, Pollinator beds, Hedge, Material Depot	tbd

Phase 3: Planting and building

Build structures (See Appendix E for budget projections.)	Raised beds and the pavilion, can be done any time that makes sense because of the placement of these elements in the design.	Seed Money Grant, and crowd funding for pantry garden. Tool shed finished: \$270 ADA Raised beds finished \$700 Standar raised beds material \$120
Historical Marker Kiosk	Depends on the timeline of the Gray Historical Society.	--
Plant canopy trees (See Appendix F for plant list.)	All trees should be bare root for best chance of survival, care in planting method, staking, and varmint protection must be taken.	Cost for trees can be minimized with group ordering through Fedco. Edgewood Nursery is another great source. Plant material estimate: \$775
Plant hedges and understory (See Appendix F for plant list.)	All trees should be bare root for best chance of survival, care in planting method, staking, and varmint protection must be taken.	Included with above estimates
Finally, plant herbaceous perennials, flowers, herbs	Avoid too much moving around as they mature.	Cost can be minimized here by gathering divisions from

and groundcovers and shade lovers. (See Appendix F for plant list.)		other gardens, neighbors and community swaps.
Planting Annuals Annual interplanting.	While waiting for perennials to mature, plant lots of annuals around the perennial edibles for ground cover and soil building, and beneficial insects.	Cover crop seed can be bought from Johnny's Seeds and Pinetree seeds. \$100 estimated, includes pantry section

Phase 4: Harvest and Maintenance

Protect Trees from wind and varmints.	Provide support for newly planted trees. Tube them for winter.	tbd
Harvest for nut trees, shrubs, will be in 5 years	Tarp method for catching fruit and nuts is best.	Call on gleaners society and Gray Local Food Rules for harvesting appropriately and plant care.
Most perennial vegetables will be harvestable and split able within 2-3 years	Adage for perennial veg is "first they sleep. then they creep, then they leap"! Varieties recommended are for spring, summer, and fall harvest.	Again gleaners can help maintain the plants.
Pruning Fruit trees and edible hedges layers	Most pruning needs to occur when trees and shrubs are dormant; winter and early spring.	Holding a pruning skills class on site would be a great way to get your community involved. Again gleaners can help maintain the plants.

Phase 5: Establishment

Irrigation	Passive irrigation is built in. Rain barrels would ensure resilience in a drought month.	200-500 gallons \$200-500
Soil Amendments	topping up beds with compost and sheet mulch each year.	Subsequent soil testing and modest soil amendments

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

Pruning	Each plant can be pruned for better habit and control.	Local Food Group
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Additional Implementation Options:

Educational Events: Invite local skilled builders and gardeners to share their skills and knowledge. List their offerings in the Community and Adult Education Catalogue. Paying them for their time can help attract people that way to learn. Hands on activities can move implementation along. It helps to include food and refreshments. Sponsors can be sought to fund these events.

Permablitzing: Formal organized work parties hosted by members of a community of interest. You can also hire a project coordinator to gather materials, tools, safety and snacks. This project is approved for collaboration with the Resilience Hub in Portland which organizes permablitzes.

Design Resources

In addition to the footnotes located throughout this document, here are additional recommended resources pertaining to key elements of this design:

Low Mow Seed

<https://www.prairienursery.com/resources-and-guides/no-mow-resources/>

Cover Crops

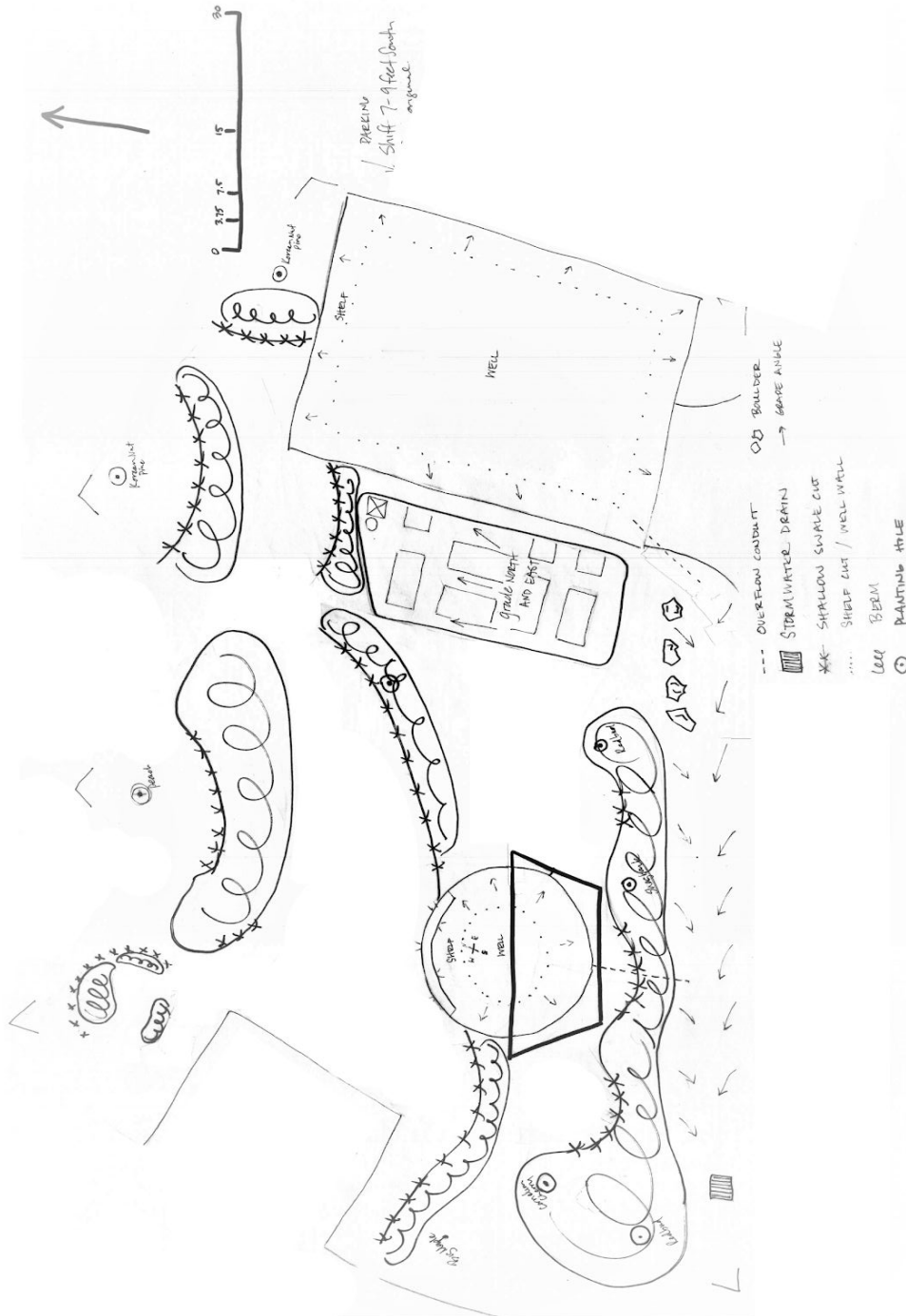
<http://www.mofga.org/Publications/MaineOrganicFarmerGardener/Summer2013/GreenManures/tabid/2621/Default.aspx>

Rain Catchment Resources

<https://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2012-01-rainwater-catchment-high-tunnel-irrigation-use.pdf>

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

APPENDIX A: EARTHWORKS PLAN



APPENDIX B: EARTHWORKS PERSPECTIVES

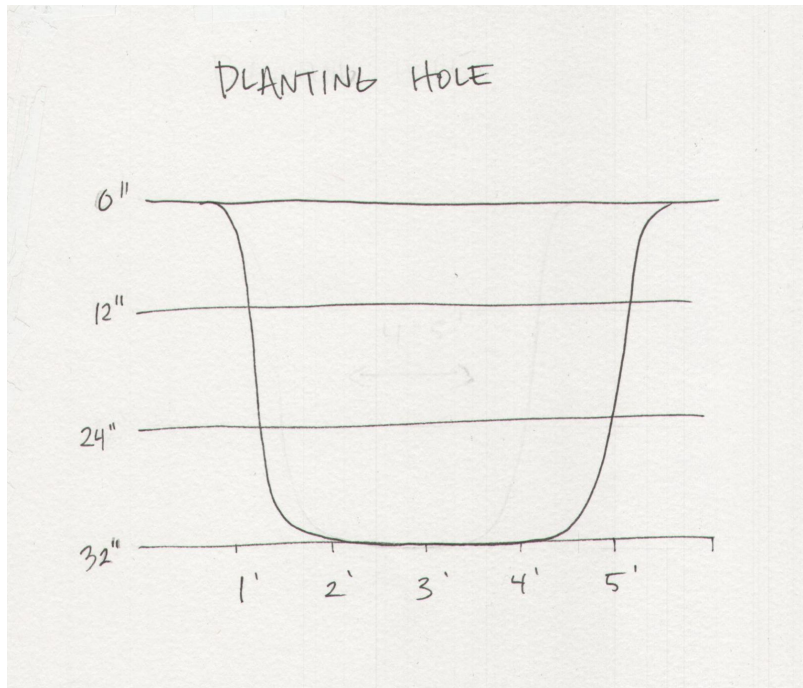


Fig. 1

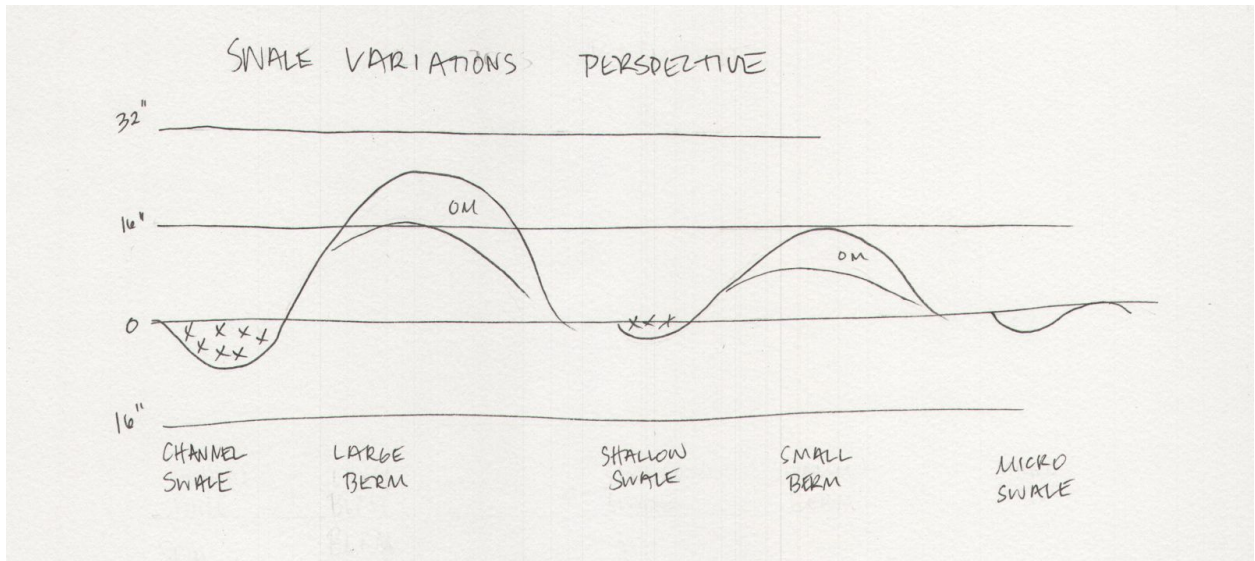


Fig. 2 Swale & Berm depths

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

APPENDIX B: EARTHWORKS PERSPECTIVES

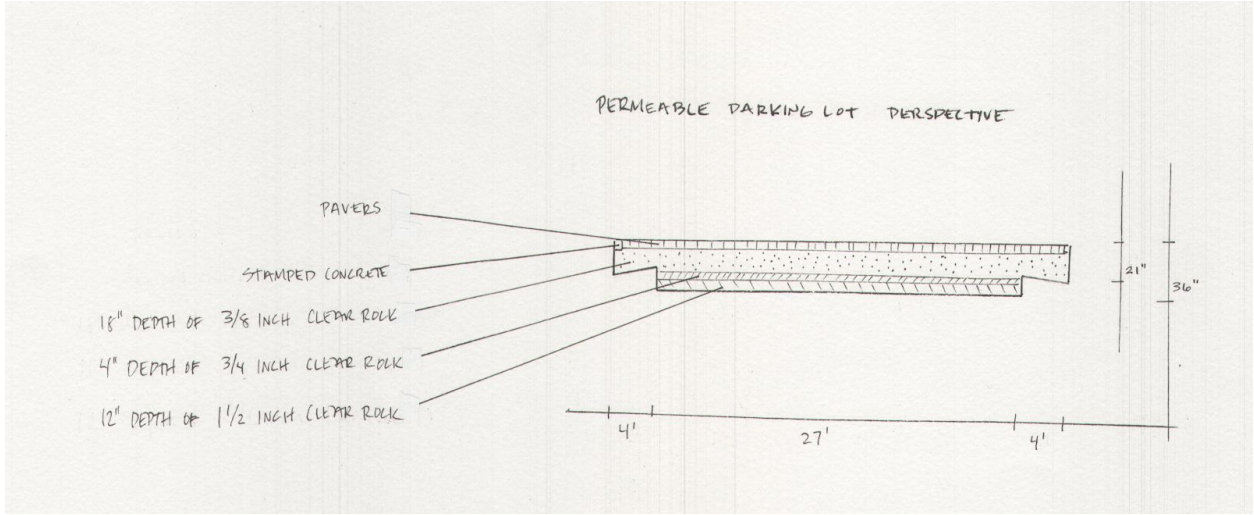


Fig. 3 Dry well Perspective

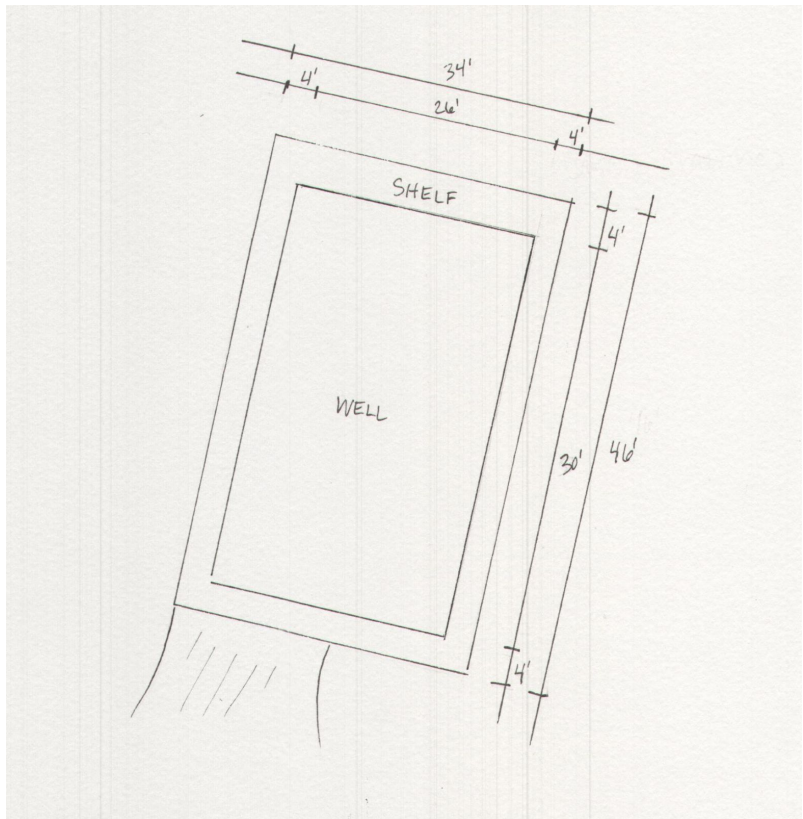


Fig 4 Permeable Parking

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

APPENDIX B: EARTHWORKS PERSPECTIVES

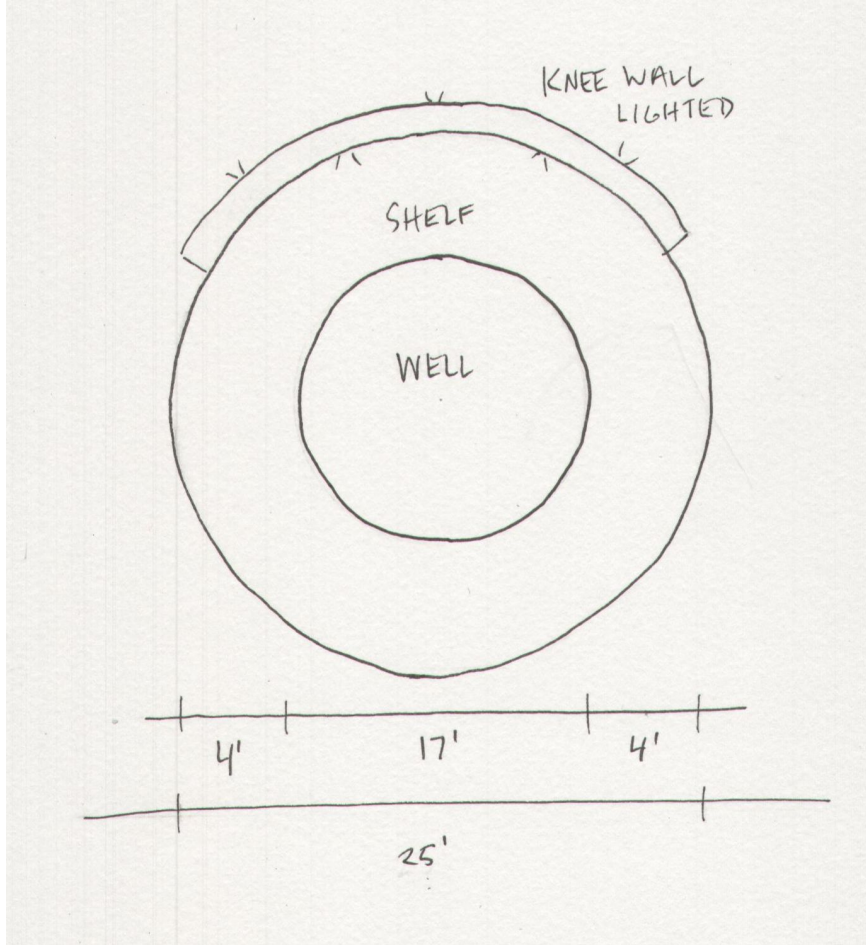


Fig. 5 Permeable Patio

APPENDIX C: SHEET MULCH RECIPE

LISA'S FANTASY SHEET MULCH

- ① Build anytime previous year for spring planting.
- ② Recipe can vary based on available materials
- ③ For same-year planting, add 2-3" finished compost under weed block layer. Plant shallow rooted things.
- ④ For very weedy areas, start w/ cardboard
- ⑤ You don't have to do this every year!! Just "top up" or patch. Renovate every 4th or 5th year.
- ⑥ Note: this is a chicken's "fantasy" scratch yard.
- ⑦ Know your materials.
- ⑧ If mulching paths (ie. chips) spread them over a lap of weed block; leave no gaps.

WWW.POTHANAMANPERMANENTVE.COM
 (2010)



APPENDIX D: ORGANIC & BIOLOGICAL MATERIALS SOURCING

Material Sources

Item	Sources	Contact info.	Cost
Woodchips	Sylvan Tree Care	(802) 279-7818	\$30-50/load*
Finished Compost	Vermont Compost Company	(802) 223-6049	\$25-40/yard, call for pricing
Cardboard	Shipping and packaging supply		
Coffee grounds and/or chaff	Aroma Joes		free
Straw Bales	Ames		\$8-12/bale
Seaweed	Falmouth Town Landing, Maine	Best to harvest at low tide after a storm off the beach	n/a
Rock Dust	Any garden store		
Soil tests	Logan Labs, UMaine Co-op Extension, UVM		Co-op Ext - \$8-\$12 Logan Labs - \$65-\$80

Plant and Seed Sources

Source	Location/Contact	Notes
Edgewood Nursery	Aaron Parker of Edgewood Nursery 653-2065	West Falmouth, Maine, source for many unique perennial vegetables, shrubs, and vines
Fedco	www.fedcoseeds.com	Source for veg, seeds, grain seed, perennials, cover crop seed, shrubs and trees Great Tree Sale in May

Raintree Nursery	www.raintreenursery.com	unique edibles, shrubs, trees, vines, groundcovers, nuts
Estabrooks		
One Green World	www.onegreenworld.com	GREAT source of edible and medicinal perennials. Order 2-3 weeks minimum due to shipping.
Eden Brothers	https://www.edenbrothers.com/	Some hard to find seeds
Johnny's Seeds	www.johnnyseeds.com	herbs, flowers, annual veg seed, cover crop seed
Food Forest Farm	http://www.foodforestfarm.com/	Unique selection of perennial vegetables, shrubs and fruit trees
Amanda's Native Plants	http://www.amandasnativeplants.com/	Native woodland species, pollinator plants
Pinetree Garden Seeds	https://www.superseeds.com/ 1-207-926-3400	Pollinator plants, vegetables, ground covers

APPENDIX E: CONSTRUCTION MATERIALS SOURCING

Budget Estimates for Key Built Features

Element/Feature	Estimate Budget	Notes
Post and beam Shed Roof Pavilion 26' wide on North side 14' on east and west 16' wide on south side with lattice screen on the south and west.	32,600	Confirm estimate Some style notes: https://www.foreverredwood.com/del-norte-outdoor-kitchen-pavilion.html
Lattice Build		\$5/ square
Electrical Contactor		Locked Pavillion Outlet Landscape wall (knee high) lighting
Path materials	1000-1500	Confirm estimate
Permeable Patio stone	\$960	1.5 inch @ 13 cy @ \$20 3/4 inch @ 4.5 cy @ \$35 3/8 inch @ 27 cy +/- @ \$20
Permeable Patio Plaza Stone pavers	Web research gave \$7.50-\$14.00 per square foot	Called Genest Concrete for an estimate Square patio stone. 25 foot round (491 foot area) with stamped concrete edge Granite compass in the center Knee wall
Permeable parking stone	\$ 2250	1.5 inch @ 32 cy @ \$ 20 3/4 inch @ 11 cy @ \$ 35 3/8 inch @ 62 cy +/- @ \$20
Permeable parking pavers Plaza Stone pavers	Web research gave \$7.50-\$14.00 per square foot	Called Genest Concrete for an estimate

		47 x 35 foot rectangle (1645 foot area) Rectangle stone in herringbone pattern
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APPENDIX F: PLANT LIST

Canopy Plants

Common Name	Latin Name	Ht x Width	Function	Quantity	Source	Cost
Shagbark Hickory	<i>Carya ovata</i>	60-80'	Edible nut/ Shade/ habitat	1	Fedco	\$16.00 ea
Linden	<i>Tilia americana</i>	60-80'	Edible leaf/ Shade/ habitat	1	Fedco	\$16.00 ea
Red Mulberry	<i>Morus rubra</i>	80' x 30'	Edible Fruits	1	Okios	\$17.95/ea
Black Walnut	<i>Juglans Nigra</i>	70-80' tall	Edible Nuts	1	New Forest Farm	\$125/25
Korean Nut Pine	<i>Pinus koraiensis</i>	50' tall x 30'	Edible Nuts, windbreak, winter color	2	Burnt Ridge	\$15.00 ea
Red Bud	<i>Cercis canadensis</i>	25-30' x same	Pollinator/ Spring show	1	Fedco	\$16.75 ea
Asian Pear (Nijisseiki, Shinko or Hosui)	<i>Pyrus Pyrifolia</i>	18' x 12'	Edible fruits, Pollinator, cooked or raw Nijisseiki stores best, Shikko second best.	2	Fedco, New Forest Farm	31.25/ea
Seckel Pear	<i>Pyrus Communis</i>	8' x 6'	Edible fruits, best fresh	2	Fedco	\$31.25

Understory Plantings

Cornelian Cherry*	C. Mas, "Pioneer"	20-25' x 15-20'	Edible fruit	2	Fedco	\$25.00/ea
Serviceberry*	<i>Amelanchier laevis</i>	20-25' x 15'	Edible fruit	1	Fedco	\$15.00/ea

Hazelnut	Corylus Spp.	12-18' x 10-15'	edible nuts, forms hedges, coppice wood	2	Fedco	\$16.00/ea

Shrub Layer

Seaberry	Hippophae rhamnoides	8-10'	Edible fruit	6	Edgewood	\$15.00 ea
Elderberry	Sambucus Nigra	6 - 12' x 6 -12'	Edible/Medicinal Fruit	8	Swaps/Cuttings	--
Witch Hazel	Corylopsis	6' x 6'	Fall bloom, medicinal,	2	Fedco	\$16.50 ea
Hazelnut	Corylus Spp.	12-18' x 10-15'	edible nuts, forms hedges, coppice wood	3	Fedco	\$16.00/ea
Nanking Cherry	Prunus tomentosa	6-10' x 6-8'	Edible fruits	3	Fedco	\$14.50 ea
Blueberry	Vaccinium corymbosum	4-6' x same	Edible fruits	5		
Juneberry	Amelanchier "Regent"	4-6' x same	Edible fruit, native, wildlife plant	2	Fedco/Okios	\$5.00/ea
Honeyberry	L. Caerulea, "Berry Blue", "Borealis" and "Indigo Gem"	6-8' x same	Edible fruits; ripen in early June	3	Fedco	21.50/ea
Goumi	Elaeagnus multiflora	6-8' x same	Nitrogen fixation, edible fruits high in Vitamin C, mulch	2	Raintree Nursery	24.50/ea
Heather	Calluna vulgaris	12-14" x 12-24"	Pollinator, showy border	3-5	Estabrooks	

Siberian PeaShrub	Caragana arborescens	10' x 8'	Nitrogen fixation, windbreak, edible pods and peas, medicinal	3	Fedco	\$14.50/ea
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Herbaceous and Ground Cover

Common Name	Latin Name	Ht x Width	Function	Qty	Source	Cost
Dwarf Maiden Grass	Miscanthus sinensis	32-38" x 18-24"	Fall interest	3		
Switchgrass	Panicum v.	4-6' x 2-3'	Structure, visual screen	6-8	Estabro oks	
Russian Sage	Perovskia	28-34" x 24-30"	Pollinator,	3		
Coneflower	Echinacea Purpurea Echinacea x	48" x 24" 16-20" x 12-18"	Pollinator, Medicinal	6	Fedco	\$3 seeds
Sea Holly	Eryngium planum	8' - 12' x	Pollinator	6	Estabro oks	
Comfrey	Symphytum officinale	24-48" tall	medicinal, pollinator, Dynamic accumulator	2	Fedco	\$5.25/2
Daffodils	Narcissus	8-10"	Nectar, deters moles and voles	8-10	Skillins/O'donels /Fedco	
Red Clover	Trifolium Repens	groundcover	nectar, ground cover, nitrogen fixation	seed	Pinetree Garden Seeds	\$6.95/lb
Yarrow	Achillea millefolium	2-3' x indefinitely	Dynamic Accumulator, living mulch	3	Fedco	\$11.25/2

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

Mouse Garlic	Allium schoenoprasum	6-20"	Nectar, pest confuser, food, prevent apple scab	2-3 clumps	Edgewood or Rachel Lyn	
Garlic Chives	Allium Tuberosum	8-12"	Food, nectar, pest confuser	2-3	Fedco seeds	
Violets	Viola odorata	8-12: tall	Edible flowers and greens	1	swap/neighbor	
Welsh "walking" Onion	A.fistulosum	2' x 8" clumper	annual scallion, also perennial	1	Edgewood or Rachel Lyn	\$8.95/ea
French Sorrel "Profusion"	Rumex acetosa	24" clumping	edible greens, dynamic accumulator	5-8	Eden Seeds	\$2.95 packet
Anise Hyssop	Agastache foeniculum	2-4' x 1'	Edible leaves, tea, bee plant	4	Johnny's or Fedco, Rachel Lyn	

Borage	Borago officinalis	2' x 4'	Pollinator, beneficial insect attractor,	1 packet	Fedco	
Marigolds	Calendula Officinalis	2' x 1'	Pollinator, beneficial insect attractor,	1 packet	Fedco	
Creeping Nasturtiums	Tropaeolum majus	4 - 6'	Trailing Ground Cover, Pollinator, beneficial insect attractor,	1 packet	Fedco	
Rose Campion	Lychnis Coronaria	24" to 36" x				
Lavender	Lavandula spp.	16-18" tall	Aromatic herb	1-3	Fedco	\$15.00/3

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

	'angustifolia'					
Lemon Balm	Melissa officinalis	18-24"	Beneficial insect attractor, living mulch	1	Fedco	
Sea Kale	Crambe Maritima	2-3' x 3'	Edible greens, edible shoots, nectar	1	Food Forest Farm	\$12.95/ea

Marshmallow	Althaea Officinalis	5-8' tall	medicinal, pollinator	3	Fedco	\$17.25/3
Echinacea	Echinacea Purpurea	3-5' tall	Pollinator	2	Fedco	
Aster	Symphyotric hum Novae-angliae starwort	30-36" tall	Pollinator	seeds	Fedco	\$2.60
Black-eyed Susan*	Rudbeckia hirta	1-2' tall	Pollinator	seeds	Amanda's Natives	\$2.80
Blue Vervain	Verbena hastata	2-5' tall	Perennial Wildflower	seeds	Amanda's natives	\$3.90

*Denotes plant added after concept map

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

APPENDIX G: CONCEPTUAL DESIGN

43° 53' 7" North 70° 19' 47" West

5 Yarmouth Road, Gray, Maine



Edible Landscape / Stormwater Management / Community Garden / Gathering Place

Attachment: Concept Narrative Food Forest Park at 5 Yarmouth (5241 : Yarmouth Road Pocket Park)

APPENDIX H: MAINTENANCE PLAN

Winter

- Protect young tree stems from mice with tubing.
- Protect young foliage from deer with caging.
- Review implementation plan and order seeds.
- Late winter – prune trees and shrubs before they break dormancy.
- Store snow only in designated contaminated snow areas.
- Close permeable parking lot. Do not plough them.

Spring

- Early spring – put rain barrels in place, if you have them.
- Run drip irrigation, if using.
- Plant seeds and seedlings according to their needs.
- Top up any beds that need additional sheet mulching.
- Solarize patches of goutweed to suppress.
- Plant spring greens.

Summer

- Enjoy the harvest! Freeze, can, dry, gift or otherwise consume the bounty.
- Minimal weeding and watering due to heavy sheet mulching.
- Irrigate trees and shrubs.
- Any time – “top up” mulch with additional wood chips or shavings at your discretion.
- Chop and drop dynamic accumulators.

Fall

- Continue harvest.
- Remove dead plant material at bed surfaces (leaving roots intact unless diseased) and compost plant material. Leave some plants to go to seed and naturalize if desired.
- “Top up” or patch sheet mulched beds with additional organic matter or compost if needed, especially for beds that will house heavy feeders next year.
- Late fall – drain and store rain barrels for winter.
- Gather and store leaves as your carbon source to mix with green plant cuttings and food waste in compost bin.

Throughout the year

- Secure compost bins with lock and key
- Secure rain barrel with lock and key
- Patrol

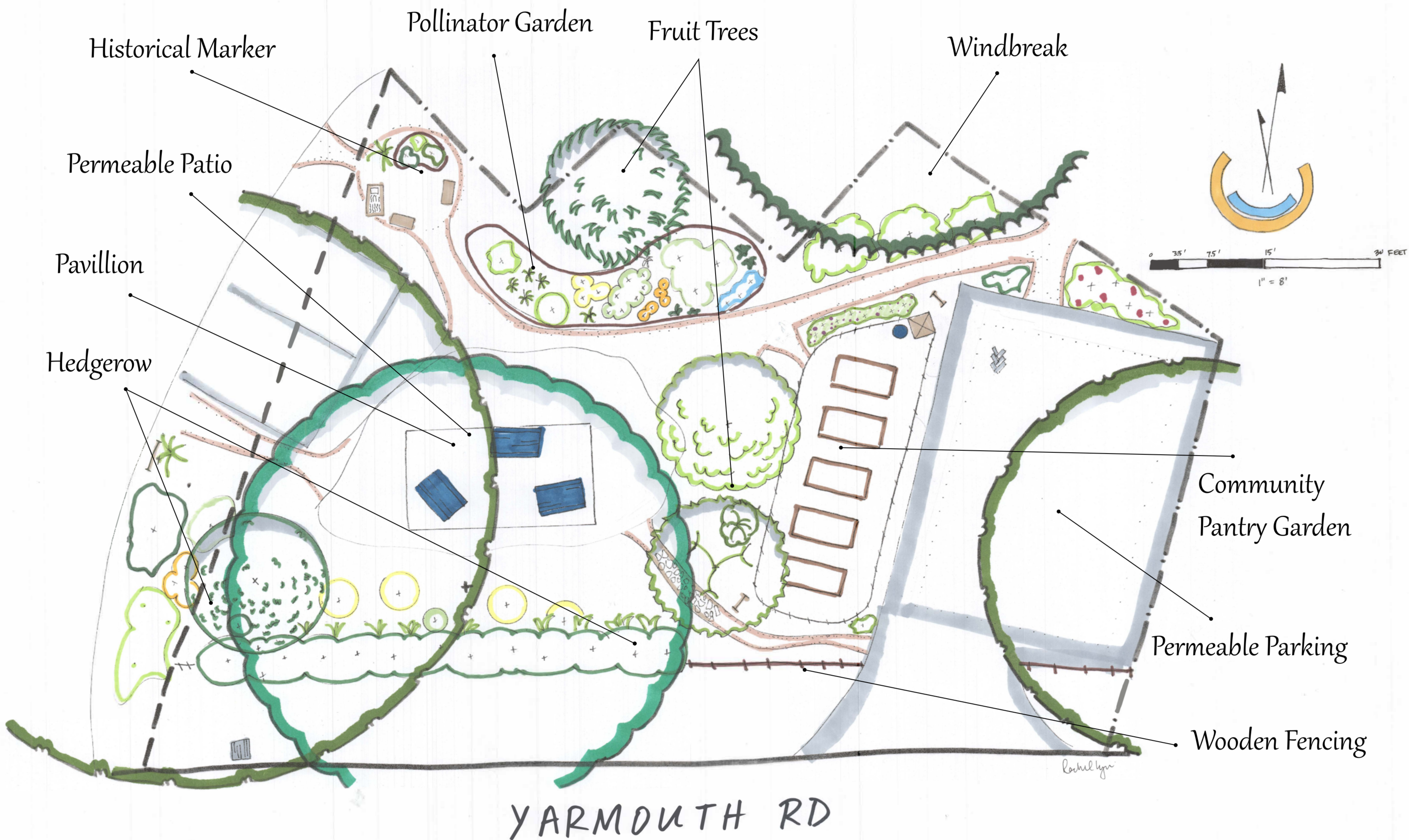
Gray Urban Food Forest: A Micro Park

Elevation +308'

Magnetic Declination 15° West

43° 53'7" North 70° 19'47" West

5 Yarmouth Road, Gray, Maine



Edible Landscape / Stormwater Management / Community Garden / Gathering Place

Attachment: Conceptual (5241 - Yarmouth Road Pocket Park)