

THE
LEDYARD GARDENS

Food Production
in Ledyard for Ledyard

Proposal
By Sean Moriarty

I would like to start and operate an organic no-till vegetable garden in a portion of the cleared green that lies to the south of the Nathan Lester House.

My reasons are simple.

- Most of the produce available to Ledyard residents is grown hundreds to thousands of miles away. This isn't fresh, healthy or sustainable.
- We can't wait for another disruption to empty the store shelves; this would be a step toward self-reliance.
- Small farms and gardens can be ethically managed, growing delicious produce. No gas or diesel engines required on the scale I'm proposing.
- I'd like to bring healthy growing practices to Ledyard's doorstep. Open to the public, i.e. - this is how real food grows.
- I believe towns should be encouraging local growers. Land is a tough access for young farmers, but there's no future without food.
- Local food creates local pride.
- The Ledyard Oak and Nathan Lester House would be a much greater attraction if it was home to a working market garden, open to the public view.
- A weekend farm stand would be accessible, communal, and a healthy boost to the site's appeal. Go for a trail walk, go home with fresh veggies.
- A town encouraged garden would send a message to all residents and neighboring towns alike, Ledyard cares about the health of its community.
- There are concerning problems with our larger food system. This might only be a small step forward, but it's a first step.
- The Ledyard Gardens can grow too. My vision is to help establish a network of small production gardens scattered across our town. Increase the diversity, refine the best growing practices and build something that works for Ledyard and its people.

What would The Ledyard Gardens look like?

I just mentioned in the last bullet point that I envision multiple gardens spread throughout Ledyard, connecting across our community and partnering with other branches of the town like the Ledyard Food Pantry, LHS Agri-Science, Parks and Rec, ... but I'll expand on that later on.

If it starts, it begins as one garden. To me, that choice should be the Nathan Lester House green. As a true farmhouse and historical site, the Lester House gives Ledyard residents a glimpse into our own history. There's even a farm tool museum onsite. But there's nothing growing, yet.

I propose to establish and manage an organic no-till garden, approximately 75' x 110' on the south-most edge of the Lester House Green.



This would be out of the way for most visitors. The picnic tables and shade trees sit much closer to the Lester house and trail entrances.

For the 75' x 110' proposed plot, I could establish 50, 50ft long growing beds. Beds will be 24" wide with an 8" walking path on both sides. This garden will be tended by hand, no machinery, pollution or disrupting noise. It will be a permanent bed, no-till style garden.

What is a no-till garden?

Tilling is the agitation of soil to control its texture or tilth. It's an intensive practice that cuts into the earth at set depths, slicing it hundreds of times per minute to incorporate air and organic matter, leaving behind a fluffy seed bed. While it does make planting easier, it's essentially an attack on soil. Tilling mixes and aerates every particle of the ground hit, destroying its natural structure and burning off surface moisture necessary for earthworms and the smaller microbial life. It releases carbon stored in the soil, allowing it to return to the air as CO₂ - a greenhouse gas. It also reduces the soil's ability to absorb and retain moisture. The more you till, the less your soil acts like soil.

"No-till" is common branding for better growing methods on farms and gardens. Small homesteads and even monocrop soybean farmers can practice no-till. There are big differences, but what it means is a pledge not to disrupt your soil more than is necessary.

Soil is home to life; earthworms, fungi, and trillions of microorganisms that all need a sheltered environment to carry on. There are microorganisms that have symbiotic relationships with plant roots, giving moisture, nutrients and minerals in exchange for the plant's excess carbon. If you can protect and nurture the life in your soil, your plants will thrive.

If you don't protect and nurture the life in your soil, it turns into dirt. It loses the life it once held and it becomes little more than a sterile medium for roots to inhabit, requiring frequent inputs of nutrients and water to keep the plants growing. If you don't keep up with either, your

crops suffer. This is what happened in the Dust Bowl of America. Farmers were overzealous with mechanical cultivation, plowing up millions of acres, and when the rain became irregular, their topsoil – their way of life – literally blew away.

Protecting our own lives means learning to protect our soils.

Ray Archuleta, a retired soil scientist with the NRCS (National Resources Conservation Service) has shared his simple principles of good soil health. They are – limit disturbance, cover the soil, increase diversity, and keep a live root growing. All of these practices come under different names farmers use to label themselves – No-till, regenerative, back to Eden, carbon farming, forest gardening. All of this is after the same goal, refine and practice the healthiest and most ethical way to grow food. That is my mission.

How would I manage the Ledyard Gardens?

I would establish “permanent beds.” A permanent bed in farming is one that whence established is not plowed under in-between cash crops or at the end and beginning of every season. You stake out the bed lines, in this case 24” wide with 8” pathway aisles, and after you’ve “made the bed” you don’t ever step on it or plow it in. The idea is to create a haven for soil life to flourish, so after your initial bed making, you don’t want to seriously disturb it again.

Ledyard is in the USDA Plant Hardiness Zone 6B. Our growing season is about 9 months long, with the first plants started in the greenhouse in March and cold hardy plants being harvested into November.

My plan is to break down bed planning and crop rotations by the season, because they have to be paired with cover cropping schedules.

A cover crop is when you plant seeds that aren’t intended for a payoff harvest. Cover cropping recycles nutrients and adds a great amount of biomass (worm food) to the surface when cut down and left as a mulch. Cover cropping is essential to good soil health, and it checks 3 of our 4 target principles. It covers the soil (ground cover can be

living or dead), adds diversity to our growing space, and ensures there's always a live root growing in our beds, even when a cash crop is not.

There are four classes to cover crops: broadleaves (good for shading), brassicas (roots grow wide and deep, loosening soil), legumes (which add nitrogen), and grasses (which make a fine straw mulch).

Cover crops are incredibly important to keep the vital nutrients plants require in the topsoil zone. They collect and maintain what would otherwise be lost to leaching – soluble salts and minerals washed away from the topsoil.

Of the 25 or more different vegetables I plan to grow in The Ledyard Gardens, they will all fall into one of the three growing seasons: spring, summer or autumn. It's important for me to distinctly separate them to work within my cover cropping system. That system is designed to give each bed 1 rest season for every season it produces a harvestable crop. It works in rotation:

- Spring beds become Autumn beds this year
- Autumn beds become Summer beds next year
- Summer beds become Spring beds next year

This rotation means:

After a Spring bed is harvested, it's put into "nutrient recycling mode" with summer-shading, broadleaf cover crops (Buckwheat, Sunflower, Pearl Millet), until that bed will be planted with an Autumn cash crop.

After an Autumn bed is harvested, or even by late September, cold-hardy winter cover crops are overseeded (Winter Rye, Crimson Clover, Hairy Vetch, Alfalfa, Winter Wheat). They germinate before frost, survive the winter, and continue to grow in spring. They are let to grow until May when they're cut down, to be used as a thick straw mulch in the hottest months for summer crops.

After a Summer bed is harvested, it's seeded with winter-killing cover crops (Oilseed Radish, Buckwheat, Forage Turnips, Spring Oats). These continue to grow until frost kills them off and they cover the soil through the winter. By spring the cover crop has decomposed, and the bed is primed for planting. This works out well because plants need more sunlight warming the soil in the cold days of early spring, before they grow and begin to shade out the surface themselves.

In each season, a cover crop must be grown and killed back before cash crops are planted into the bed. In each season, cover crops help to recycle (and even add) nutrients into the topsoil. Managing cover crops is vital in managing a productive, healthy garden.

Explain the steps in going from grass to garden

A no-till garden means minimum disruption after beds are established, but you first have to get rid of the perennial grass. Normally, this is where farmers turn to the plow, disc harrow, or rototiller, but this is where I turn to the broadfork (below, left) and chop hoe (below, right). We only need to cut the surface roots of the grass to kill it; we don't need to overturn every inch of topsoil.



First step is to broadfork exactly where the permanent beds will be. This lifts the soil without mixing it. Second step is to come through with a heavy-duty chopping hoe, slicing through the surface. It cuts grass roots without mixing up much soil beneath and it leaves the grass to dry and die on the surface.

To smother grass on the aisles, I would lay down thick biodegradable construction paper, 8" wide and then rake the dead grass onto the paper. The aisles will not be seeded to cover crop, but they will get regular coverings. Excess cover crop material, surrounding grass cuttings, or leafy plant residues after a harvest will be raked into the aisles. This helps alleviate compaction, covers the soil and retains moisture, and adds an additional supply of decomposing organic matter that will nourish the soil below for the next crop growing.

This process will be the same for starting all beds – spring, summer and autumn. When the beds are made and put into the cycle of production there will be a continuous rotation of cash crop and cover crop that takes over, keeping live plants in every bed and organic matter mulch in every aisle.

What tools are used?

The tools you use with permanent bed growing are physical but simple, and affordable. The broadfork is considered the most important one. It's an enormous fork that you step into the ground, then tilt back to lift the soil. It doesn't blend your soil like a tiller. It alleviates compaction and gives your plant roots plenty of space to grow into. The chop hoe as just mentioned will be vital in cutting through the existing grass and preparing beds. The European-style scythe will have a role to play as well, cutting down cover crops and grass to be used as mulch.

Imagine that, the amazement Ledyard Oak visitors will have to see their local farmer using an ancient tool like the scythe. Part of the beauty of hand tools is how it brings its history with it.

Shovel and rake, wheel hoe, hand trowel and hay fork – all will have a role in The Ledyard Gardens. And the plants that won't be started indoors will be direct sown with a Jang garden seeder.

Fencing

Deer are going to be problematic if not kept out. On most farms, they have perimeter electric fencing at least 6 feet high. However, I'm not proposing electric-shock fencing. This is a public space and the garden needs to feel open and welcoming. We don't want any children or dogs getting zapped.

The solution is an easy one, and non-permanent. Metal T-posts, driven into the ground along the perimeter and 50lb fishing line tied at heights of 1ft., 2ft., 3ft., 4ft., 5ft., and 6ft. It's a safe and effective way to resist deer entrance. They walk up, feel the resistance and are usually spooked enough to turn right around. Nothing is foolproof, but we used this method at Drumlin Farm in Lincoln, MA to protect certain crops – none of our acres were deer fenced – and it worked very well.

I would also plant a perimeter of sunflowers around the outside fence edge to brighten its appearance.

Where will you wash vegetables?

Customers want clean produce and farmers need to keep their dirt – The Ledyard Gardens will need a washing station. I propose to use the open bay in the red barn on premises (pictured on next page). It's visible to the public, shaded and has plenty of room to wash, pack and stack produce for sale.



Access to the barn space, hose water and a standard electrical outlet connection would make this wash station completely serviceable. Inside the bay I would build a screened washing table for spraying down root vegetables. The table would have a catch system so all the dirty water would be collected in rain barrels and given back to the garden soil. No water runoff or erosion would come from this washing station. A 50-gallon wash tub would also be added for dunking and rinsing greens, head lettuces, etc. Again, all water used for washing produce would be collected and returned to the garden as irrigation.

Clean veggies need a cool space. I plan on harvesting veggies 1-2 days before sale at the longest. Tough things like root crops will hold well, but leafy greens need to be harvested as close to sale as possible. Either way, when harvested, they need to be kept cool until sold. So, what can we do? There's an inexpensive way to build a walk-in cooler that requires nothing more than an AC unit and a device called a CoolBot. The CoolBot regulates the AC controls, turning any insulated room into a refrigerator while using much less electricity than standard walk-in coolers. Thousands of small farmers use this system and it works well.

I would like to frame and panel a 6'x8' room in the rear of the barn bay to serve as our walk-in cooler. This would not be attached to the historical barn, just an independent plywood box in the rear of the

bay that would shelve storage totes of washed produce. The room would have one door and an opening to seal-fit an AC unit. In such a small space, an AC unit and CoolBot will have no trouble keeping that room at a steady 37 degrees F, ideal for storing fresh produce.

Where will you sell vegetables?

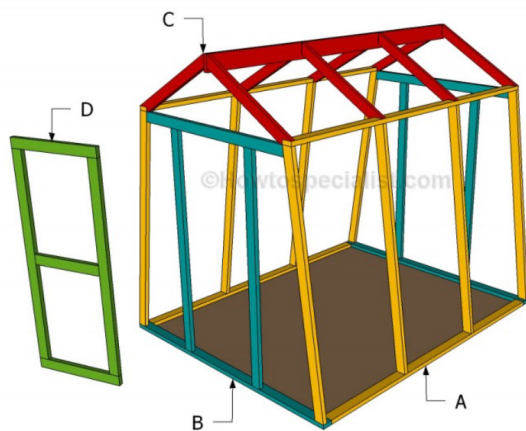
I think the best place to set up a farm stand would be out of the same bay where the produce gets washed. It's shaded, close to the parking lot, and right by the trail entrances.

Farm stand would be open during the harvest season, May – November. Saturday mornings, 8am-2pm. Free coffee will be available, because that never hurts to draw visitors.

What about a Greenhouse?

Yes, I would also like permission to build a small 10'x8' greenhouse on site (design and materials list pictured on next page). It can be safely anchored to ground-driven posts to be secure, but also non-permanent.

Greenhouses are necessary for starting transplants indoors. Seedlings can be protected and nurtured while in a controlled environment, giving them their best chances when put in the ground. In New England, you have to get a head start on the weather. For instance, tomatoes might be started in a greenhouse as early as February, though not planted in the ground until May.



- 4 pieces of 2×4 lumber – 10'
- 23 pieces of 2×4 lumber – 8'
- 1 piece of 2×6 lumber – 10'
- 500 pieces of 2 1/2" screws
- film
- vent opener
- thermostat outlet
- hinges + latch

I'm open to full discussion on choosing a site for this. It would have to be within reach of a garden hose and close enough for an extension cord to reach during the cold spring months.

Greenhouses require heat inputs in the spring when temperatures are still too cold for plants to make it through. Greenhouse wraps amplify the sun's heat very well, but they don't retain it very long into the night.

While it's common for most houses to burn propane, sending heat into the whole space, I propose an alternative. Electrical heat mats are an easy way to heat seed trays from below. The heat mats are put on top of insulated board. The seed trays sit on top of the heat mat and an insulating row cover blanket is placed over the seedlings. This creates another microclimate within the already shielded greenhouse. It uses less energy to heat the plants directly and retains it much better.

This simple greenhouse and heating solution will be enough to properly start transplants for The Ledyard Gardens.

Is it a community garden?

It is in the sense that it's on town land and will help build a stronger community. But I want to be managing the entire garden - "a camel is a horse designed by committee."

Many houses in town have enough lawn space for a small garden if they're not already tending one. This is not about offering an additional lot for segments of garden space. This is about entrusting a son of Ledyard to use what he has learned on real farms to put town land into production, producing high-quality, locally available food for the community, at reasonable prices.

The Town of Ledyard can be as involved or removed as it likes. Of course, I would prefer your partnership.

What could The Ledyard Gardens become?

I think truly, this project could touch every corner of our town. The most basic point is that real food needs to be available to people wherever they live. It needs to be affordable and healthy. And better yet if it's grown sustainably!

The Ledyard Gardens could:

- Become a network of small growing areas, feeding its most immediate neighbors – eventually supplying a significant percentage of our town's food needs.
- Partner with LHS Agri-Science, connecting with their education program and courses.
- Collaborate with Parks & Recreation's adult summer classes.
- Contribute healthy donations to the Ledyard Food Pantry.
- Become a working model for a sustainable garden – minimum amendments and irrigation, maximum soil life.

One public garden could be a spark that starts a healthier town. There's no limit to the possibilities this project could unfurl – if we're open to the good, better things will grow.

What's the minimum I would need from The Town of Ledyard?

The minimum is very little – permission. That is all I really need to build a sustainable vegetable garden in the heart of our town. Permission to work the land, set up the small infrastructure a garden requires, and permission to sell at the location.

What's the maximum I could use from The Town of Ledyard?

It never hurts to have resources on your side when starting a farm. I could make do with very little; but would happily accept any help or stipend you might offer. I'd be glad to discuss possibilities on any/all items if the Town of Ledyard were to ask: "what can we do to help?"

Arrangement

As I've stated, I could begin to build The Ledyard Gardens with or without financial/material support. As I see it, this project could fall into any arrangement between two possible extremes:

1. I lease the proposed plot of land and barn bay space, operating The Ledyard Gardens as a sole proprietorship market garden without any further ties to the Town.

or

2. The Town of Ledyard establishes The Ledyard Gardens and hires me to manage and grow it with full assistance in building this into a community pillar.

I am perfectly ready to begin as a sole proprietorship – I will bear the financial responsibility in purchasing all seed, tools, fencing material, greenhouse material, wash station and cooler materials, farm insurance, and everything else that I require for vegetable production. I would build and operate The Ledyard Gardens in 2023, sharing my records at the end of the growing season. Then Ledyard can review what was spent, how much was grown, what revenue came in, and anything else that might go into a decision of future involvement – town feeling, media attention, healthy activity, etc.

I rest this section of my proposal on my opinion that no matter who is bearing the cost of startup, it's paramount to me that this begins as soon as possible. Food is not a security in this country or in our town. Price inflation, rising oil costs and a shrinking supply, damaging farming practices, COVID; anything can be a devastating disruption to our most basic requirement, food.

I believe the best time to start building The Ledyard Gardens was 10 years ago. The second-best time is right now.

Why me?

My name is Sean Moriarty. My family moved to Ledyard when I was 1 year old. I grew up at 24 Partridge Hollow Rd, within walking distance of the Ledyard Oak. I visit the trails regularly to walk, run, and play guitar on the green. We have family photos of my brother and I there when some of The Great Oak still stood. It is the most peaceful place in our town, and I love it.

I'm a product of the Ledyard school system, from GFS to Juliet Long, the Middle School on through LHS where my mother has just retired from a 36-year teaching career in the math department. I grew up seeing her give everything she had for her students. She had a devotion to her service I would emulate in The Ledyard Gardens.

While at Ledyard High I was awarded homecoming king and given the superlatives “best sense of humor” and “most spirited.” I made 1st team ECC in lacrosse and was a captain the last year Ledyard won its division title.

I graduated from The University at Albany in 2018 with my bachelor’s in Rhetoric & Communication. I worked as a copywriter for a marketing agency outside Baltimore, not liking it, and decided to come home, moving back on February 22nd, 2020. Within two weeks, everything was in shutdown. Toilet paper was scarce and supermarket shelves were empty. Ah – we’re going to need more people who know how to farm. I was apprenticing at a farm in the Berkshires by the end of March.

I was the vegetable apprentice at Square Roots Farm in Lanesborough, MA for the 2020-21 season, assistant grower at Drumlin Farm in Lincoln, MA for 2021-22, and am currently in another apprenticeship at Sisters Hill Farm in Stanfordville, NY that will finish in November. I’ve farmed on both sides of Massachusetts and in New York’s Hudson Valley, but I want to be home.

I have three seasons of experience on production farms from seed to sale. I like the planning and the physical labor. I turn 26 in November; young enough to do the work, old enough to know what I’m doing.

Final Notes

My intentions are to do right, to give back, and to help. My father is buried in Ledyard, under the words I’ve spent my whole life reading – “The value of a man’s life is measured, not in years, but in how much he is missed.”

That’s what drives me. I want to build this for the Town of Ledyard, my home. This project, The Ledyard Gardens, will help make my town a healthier, more independent place. This is for you.

I believe I'm the young man who can bring this project off paper and into the heart of our community.

The Plan

The following 6 pages contain my working crop plan for the 50, 50ft garden beds that could be created in the proposed 75' x 110' plot. Specific crop varieties are TBD, but there will be wide diversity throughout.

GROUND SCHEDULE

CROP	VARIETY	GREENHOUSE DATE	GROUND / TRANSPLANT DATE	BED SPACE	BED #	Rows Per Bed	In-Row Spacing	EST. HARVEST DATE	EST. PLANTS / YIELD WEIGHT	SOIL PREP	NOTES
SPRING BEDS											
SPINACH			March 6	0.5	A1	3	DS	May 1	36lbs		
SPINACH			March 13	0.5	A1	3	DS	May 8	36lbs		
SPINACH			March 27	0.5	A2	3	DS	May 22	36lbs		
SWISS CHARD		March 6	April 3	0.5	A2	2	8	May 29	75		
GREENS			April 10	0.5	A3	3	DS	May 22	25lbs		
KALE		March 13	April 10	1	A4	2	12	May 29	100		
CHINESE CABBAGE		March 13	April 10	0.5	A3	2	12	June 5	50		
CARROT			April 10	0.5	A5	3	DS	July 4	90lbs		
CABBAGE		March 20	April 10	0.75	A5,6	2	12	June 26	75		
BEETS			April 10	0.5	A7	3	DS	May 29	60lb		
BROCCOLI		March 13	April 10	0.75	A6	2	18	June 12	48		
TURNIPS			April 10	0.5	A7	3	DS	May 16	75lbs		
SPINACH			April 10	0.5	A8	3	DS	June 5	36lbs		
LETTUCE		March 13	April 11	0.75	A9	2	12	May 1	75		
GREENS			April 17	0.5	A10	3	DS	May 29	25lbs		
BOK CHOI		March 20	April 17	0.75	A9,10	2	12	June 5	75		
SWISS CHARD		March 20	April 17	0.5	A11	2	8	June 12	75		
GREENS			April 24	0.5	A11	3	DS	May 5	25lbs		
KALE		March 27	April 24	0.5	A12	2	12	June 12	50		
CHINESE CABBAGE		March 27	April 24	0.5	A12	2	12	June 19	50		
CARROT			April 24	0.5	A13	3	DS	July 18	90lbs		
CABBAGE		April 3	April 24	0.5	A13	2	18	July 10	50		
BEETS			April 24	0.5	A14	3	DS	June 12	60lbs		
BROCCOLI		March 27	April 24	0.75	A14,15	2	18	June 26	48		
BOK CHOI		March 27	April 24	0.75	A15	2	12	June 12	75		
TURNIPS			April 24	0.5	A16	3	DS	May 30	75lbs		
LETTUCE		March 27	April 25	0.75	A16,17	2	12	June 12	75		
SCALLIONS		March 10	April 30	0.25	A17	3	3	June 26	75		
GREENS			May 1	0.5	A17	3	DS	June 12	25lbs		
POTATO			May 1	2	A18,19	1	8	July 31	120lbs		
ONIONS		March 10	May 1	2	A20,21	2	2	July 10	480		
FLOWERS		April 20	May 6	0.5	A22	2	varies		beauty		
GREENS			May 8	0.5	A23	3	DS	June 19	25lbs		
CARROT			May 8	0.5	A23	3	DS	August 1	90lbs		
BEETS			May 8	0.5	A24	3	DS	June 26	60lbs		
TURNIPS			May 8	0.5	A22	3	DS	June 12	75lbs		
SCALLIONS		March 24	May 8	0.25	A24	3	6	July 10	75		
SUMMER SQUASH		April 10	May 8	1	A25	1	24	June 26	25		
HERBS			May 8	0.25	A24	3	DS	July 10	flavor		
SUMMER BEDS											
LETTUCE		April 10	May 9	0.5	B1	2	12	June 26	50		
GREENS			May 15	0.5	B1	3	DS	June 26	25lbs		
SUMMER SQUASH			May 15	1	B2	1	24	July 10	25		
TOMATO		March 13	May 15	2	B3,4	1	18	July 17	64		
BEANS			May 15	0.5	B5	1	3	July 17	100		
CUCUMBER		April 17	May 16	1	B6	1	8	July 10	75		
EGGPLANT		March 27	May 16	0.75	B7	1	18	July 17	48		
PEPPERS		March 24	May 20	1	B8	1	18	July 17	65		
CARROT			May 22	0.5	B5	3	DS	August 15	90lbs		
SCALLIONS		May 1	May 22	0.25	B7	3	6	July 24	75		
HERBS		April 10	May 22	0.25	B9	3	DS	July 4	flavor		
LETTUCE		April 24	May 23	0.5	B9	2	12	July 11	50		
CUCUMBER		May 2	May 29	0.5	B9,10	1	8	July 24	37		
TOMATO		March 27	May 29	2	B11,12	1	18	July 31	64		
MELONS		May 1	May 29	0.5	B10	1	18	August 14	16		
BEANS			May 29	0.5	B10,13	1	3	July 31	100		
EGGPLANT		April 10	May 30	0.5	B13	1	18	July 31	32		
CARROT			June 5	0.5	B14	3	DS	August 29	90lbs		
SCALLIONS		May 8	June 5	0.25	B13	3	6	August 7	75		
PEPPERS		April 3	June 5	0.5	B14	1	18	July 31	32		
SUMMER SQUASH			June 5	0.5	B15	1	24	July 31	13		
LETTUCE		May 8	June 6	0.5	B15	2	12	July 25	50		
CUCUMBER			June 12	0.5	B16	1	8	August 7	37		

GROUND SCHEDULE

CROP	VARIETY	GREENHOUSE DATE	GROUND / TRANSPLANT DATE	BED SPACE	BED #	Rows Per Bed	In-Row Spacing	EST. HARVEST DATE	EST. PLANTS / YIELD WEIGHT	SOIL PREP	NOTES
WINTER SQUASH			June 12	3	B17-22	1	24	September 11	75		
TOMATO		April 10	June 12	0.5	B16	1	18	August 14	16		
MELONS		May 16	June 12	0.5	B17	1	18	August 28	16		
BEANS			June 12	0.5	B18	1	3	August 14	100		
CARROT			June 19	0.5	B19	3	DS	September 11	90lbs		
SCALLIONS		May 22	June 19	0.25	B23	3	6	August 21	75		
SUMMER SQUASH			June 19	0.5	B20	1	24	August 14	13		
LETTUCE		May 22	June 20	0.5	B21	2	12	August 8	50		
CUCUMBER			June 26	0.5	B22	1	8	August 21	37		
BEANS			June 26	0.5	B23	1	3	August 28	100		
CARROT			July 3	0.5	B23,24	3	DS	September 25	90lbs		
SCALLIONS		June 5	July 3	0.25	B24	3	6	September 4	75		
LETTUCE		June 5	July 4	0.5	B24	2	12	August 22	50		
CUCUMBER			July 10	0.5	B25	1	8	September 4	37		
BEANS			July 10	0.5	B25	1	3	September 11	100		
AUTUMN BEDS											
KALE		June 26	July 17	1	A1	2	12	September 4	100		
CARROT			July 17	0.75	A2	3	DS	October 9	90lbs		
CAULIFLOWER		June 26	July 17	0.5	A2,3	2	18	September 18	32		
BROCCOLI		June 19	July 17	0.75	A3	2	18	September 18	48		
LETTUCE		June 19	July 18	0.5	A4	2	12	September 5	50		
BEETS			July 24	0.5	A4	3	DS	September 11	60lbs		
BOK CHOI		July 3	July 24	0.75	A5	2	12	September 18	75		
BEANS			July 24	0.5	A5,6	1	3	September 25	100		
LETTUCE		July 3	July 25	0.5	A8	2	12	September 19	50		
SWISS CHARD		July 3	July 25	1	A7	2	8	September 11	150		
KALE		July 10	July 31	0.75	A6	2	12	September 18	75		
CHINESE CABBAGE		July 3	July 31	0.75	A9	2	12	September 25	75		
CARROT			July 31	0.75	A10	3	DS	October 23	135lbs		
CAULIFLOWER		July 3	July 31	0.5	A8	2	18	October 2	32		
BROCCOLI		July 3	July 31	0.75	A11	2	18	October 2	48		
GREENS			August 7	0.5	A9,10	3	DS	September 19	25lbs		
CABBAGE		July 11	August 7	0.75	A12	2	12	October 2	75		
BEETS			August 7	0.5	A11,12	3	DS	September 25	60lbs		
BOK CHOI		July 17	August 7	0.5	A13	2	12	October 2	50		
SWISS CHARD		July 17	August 7	0.75	A14	2	8	September 25	112		
GREENS			August 14	0.5	A13	3	DS	September 26	25lbs		
CHINESE CABBAGE		July 17	August 14	0.5	A15	2	12	October 9	50		
DAIKON RADISH			August 14	1	A16	2	DS	October 16	600		
GREENS			August 21	0.5	A17	3	DS	October 2	25lbs		
CABBAGE		July 24	August 21	0.75	A14,15	2	12	October 16	75		
BEETS			August 21	0.5	A17	3	DS	October 9	500		
TURNIPS			August 21	0.5	A18	3	DS	October 2	500		
DAIKON RADISH			August 21	0.5	A18	2	DS	October 23	300		
GREENS			August 28	0.5	A19	3	DS	October 9	25lbs		
SPINACH			August 28	0.5	A19	3	DS	October 16	36lbs		
GREENS			September 4	0.5	A20	3	DS	October 16	25lbs		
BEETS			September 4	0.5	A20	3	DS	October 23	500		
TURNIPS			September 4	0.5	A21	3	DS	October 16	500		
SPINACH			September 4	0.5	A21	3	DS	October 23	36lbs		
GREENS			September 11	0.5	A22	3	DS	October 23	25lbs		
SPINACH			September 11	0.5	A23	3	DS	October 30	36lbs		
GREENS			September 18	0.5	A22	3	DS	October 30	25lbs		
TURNIPS			September 18	0.5	A23	3	DS	October 30	500		
SPINACH			September 18	0.5	A24	3	DS	November 6	36lbs		
GREENS			September 25	0.5	A24	3	DS	November 6	25lbs		
GARLIC			November 12	1	A25	3	6	July 4	300		

GREENHOUSE SEEDING PLAN

CROP	VARIETY	SEEDING DATE PLANNED	ACTUAL	# of Plants Needed	NOTES	GROUND / TRANSPLANT DATE	EST. HARVEST DATE
SWISS CHARD		March 6		75		April 3	May 29
SCALLIONS		March 10		75		April 30	June 26
ONIONS		March 10		480		May 1	July 10
LETTUCE		March 13		75		April 11	May 1
KALE		March 13		100		April 10	May 29
CHINESE CABBAGE		March 13		50		April 10	June 5
BROCCOLI		March 13		48		April 10	June 12
TOMATO		March 13		64		May 15	July 17
CABBAGE		March 20		75		April 10	June 26
BOK CHOI		March 20		75		April 17	June 5
SWISS CHARD		March 20		75		April 17	June 12
SCALLIONS		March 24		75		May 8	July 10
PEPPERS		March 24		65		May 20	July 17
LETTUCE		March 27		75		April 25	June 12
KALE		March 27		50		April 24	June 12
CHINESE CABBAGE		March 27		50		April 24	June 19
BROCCOLI		March 27		48		April 24	June 26
BOK CHOI		March 27		75		April 24	June 12
EGGPLANT		March 27		48		May 16	July 17
TOMATO		March 27		64		May 29	July 31
CABBAGE		April 3		50		April 24	July 10
PEPPERS		April 3		32		June 5	July 31
LETTUCE		April 10		50		May 9	June 26
EGGPLANT		April 10		32		May 30	July 31
SUMMER SQUASH		April 10		25		May 8	June 26
TOMATO		April 10		16		June 12	August 14
HERBS		April 10		TBD		May 22	July 4
CUCUMBER		April 17		75		May 16	July 10
FLOWERS		April 20		TBD		May 6	July 4
LETTUCE		April 24		50		May 23	July 11
SCALLIONS		May 1		75		May 22	July 24
MELONS		May 1		16		May 29	August 14
CUCUMBER		May 2		37		May 29	July 24
LETTUCE		May 8		50		June 6	July 25
SCALLIONS		May 8		75		June 5	August 7
MELONS		May 16		16		June 12	August 28
LETTUCE		May 22		50		June 20	August 8
SCALLIONS		May 22		75		June 19	August 21
LETTUCE		June 5		50		July 4	August 22
SCALLIONS		June 5		75		July 3	September 4
LETTUCE		June 19		50		July 18	September 5
BROCCOLI		June 19		48		July 17	September 18
KALE		June 26		100		July 17	September 4
CAULIFLOWER		June 26		32		July 17	September 18
LETTUCE		July 3		50		July 25	September 19
CHINESE CABBAGE		July 3		75		July 31	September 25
CAULIFLOWER		July 3		32		July 31	October 2
BROCCOLI		July 3		48		July 31	October 2
BOK CHOI		July 3		75		July 24	September 18
SWISS CHARD		July 3		150		July 25	September 11
KALE		July 10		75		July 31	September 18
CABBAGE		July 11		75		August 7	October 2
CHINESE CABBAGE		July 17		50		August 14	October 9
BOK CHOI		July 17		50		August 7	October 2
SWISS CHARD		July 17		112		August 7	September 25
CABBAGE		July 24		75		August 21	October 16

B E D M A P A - S P R I N G

BED #	<i>Post-Harvest Cover Crops - Buckwheat, Sunflower, Pearl Millet</i>		<i>Cover Cropping Notes</i>
1	3/6 Spinach	3/13 Spinach	
2	3/27 Spinach	4/3 Swiss Chard	
3	4/10 Greens	4/10 Chinese Cabbage	
4	4/10 Kale		
5	4/10 Carrot	4/10 Cabbage	
6	4/10 Broccoli	4/10 Cabbage	
7	4/10 Beets	4/10 Turnips	
8	4/10 Greens	4/10 Spinach	
9	4/11 Lettuce	4/17 Bok Choi	
10	4/17 Greens	4/17 Bok Choi	
11	4/17 Swiss Chard	4/24 Greens	
12	4/24 Kale	4/24 Chinese Cabbage	
13	4/24 Carrot	4/24 Cabbage	
14	4/24 Broccoli	4/24 Beets	
15	4/24 Broccoli	4/24 Bok Choi	
16	4/25 Lettuce	4/24 Turnips	
17	4/25 Lettuce	4/30 Scallions	5/1 Greens
18	5/1 Potato		
19			
20			
21	5/1 Onion		
22	5/6 Flowers	5/8 Turnips	
23	5/8 Greens	5/8 Carrot	
24	5/8 Beets	5/8 Scallions	5/8 Herbs
25	5/8 Summer Squash		

BED MAP B - SUMMER			
BED #	Post-Harvest Cover Crops - Spring Oats, Forage Radish, Forage Turnip, Buckwheat		Cover Cropping Notes
1	May 9 Lettuce	May 15 Greens	
2	May 15 Summer Squash		
3			
4	May 15 Tomato		
5	May 15 Beans	May 22 Carrot	
6	May 16 Cucumber		
7	May 16 Eggplant	May 22 Scallions	
8	May 20 Peppers		
9	May 23 Lettuce	May 22 Herbs	
10	May 29 Beans	May 29 Melons	May 29 Cucumber
11			
12	May 29 Tomato		
13	May 29 Beans	May 30 Eggplant	June 5 Scallions
14	June 5 Carrot	June 5 Peppers	
15	June 5 Summer Squash	June 6 Lettuce	
16	June 12 Cucumber	June 12 Tomato	
17		June 12 Melons	
18		June 12 Beans	
19		June 19 Carrot	
20		June 19 Summer Squash	
21		June 20 Lettuce	
22		June 26 Cucumber	
23	June 19 Scallions	June 26 Beans	
24	July 4 Lettuce	July 3 Scallions	July 3 Carrot
25	July 10 Cucumber	July 10 Beans	

BED MAP A - AUTUMN			
BED #	Post-Harvest Cover Crops - Hairy Vetch, Crimson Clover, Winter Rye, Alfalfa, Winter Wheat	Cover Cropping Notes	
1	7/17 Kale		
2	7/17 Carrot	7/17 Cauliflower	
3	7/17 Broccoli		
4	7/18 Lettuce	7/24 Beets	
5	7/24 Bok Choi	7/24 Beans	
6	7/31 Kale		
7	7/25 Swiss Chard		
8	7/25 Lettuce	7/31 Cauliflower	
9	7/31 Chinese Cabbage	8/7 Greens	
10	7/31 Carrot		
11	7/31 Broccoli	8/7 Beets	
12	7/31 Cabbage		
13	8/14 Greens	8/7 Bok Choi	
14	8/7 Swiss Chard	8/21	
15	8/14 Chinese Cabbage	Cabbage	
16	8/14 Daikon Radish		
17	8/21 Greens	8/21 Beets	
18	8/21 Turnips	8/21 Daikon	
19	8/28 Spinach	8/21 Greens	
20	9/4 Greens	9/4 Beets	
21	9/4 Spinach	9/4 Turnips	
22	9/18 Greens	9/11 Greens	
23	9/18 Turnips	9/11 Spinach	
24	9/18 Spinach	9/25 Greens	
25	11/12 Garlic		