Tyonek Grown Program Evaluation

Prepared for Tyonek Tribal Conservation District (TTCD) 2017

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TYONEK GROWN

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Purpose of the Evaluation

The Tyonek Tribal Conservation District (TTCD) has operated the Tyonek Grown Program since 2012. During these five years, the program has grown considerably. This evaluation is intended to help:

- **Program Evaluation:** Show what the Tyonek Grown program has accomplished and whether it is meeting its goals.
- **Future Direction:** Think about where to go in the future and whether the program goals need to be adjusted.
- **Metrics and Data Collection Processes:** Establish metrics and processes for data collection to better track and measure program performance.

Program Evaluation

Purpose of the Program

The Tyonek Grown program was created to enhance food security for Tyonek tribal members. Food security is defined as the physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Program activities include a garden in the remote Alaskan tribal community of Tyonek, as well as community garden farming education and outreach within the Tyonek tribal community and other remote Alaskan communities. The program is a partnership among the Tyonek Native Corporation (TNC), which owns the land for the garden; the Native Village of Tyonek (NVT), which owns the garden; and the garden's technical manager, the Tyonek Tribal Conservation District (TTCD). The Tyonek Grown Program organizational chart is produced on page 12.

The goals of the Tyonek people guide what is grown, how it is grown, and how food is distributed through the NVT. TTCD currently manages organic vegetable production, soil and nutrient management, an educational program, and seasonal garden employees. Tyonek Grown has successfully operated an annual multi-day, hands-on community gardening workshop for three consecutive years, provided onsite garden planning and technical assistance to two other remote Alaska communities, produced a workbook for communities seeking to learn from Tyonek Grown's example, and held presentations and webinars for distance learning. The Tyonek Grown program has also partnered with the Tebughna School (grades PK-12) to involve Tyonek youth in gardening activities. Students have been engaged in every step of the farming process, and the Tyonek Grown Youth Internship program employs between four and six youth to work the Tyonek Garden each summer. See program activities graphic on page 9.

Program Evolution

In the garden, Tyonek Grown produce production has increased dramatically over the past five years, with investments in infrastructure and crop trials. The garden has grown into a 1.5-acre operation (of which 0.75 acres are currently cultivated) with two Natural Resources Conservation Service (NRCS)-funded high tunnels (48 feet by 22 feet each), solar-powered irrigation and ventilation systems, 15 outdoor raised beds, over 2,000 row-feet of potatoes and mixed vegetable crops, perennial fruits, and plans for expansion in the coming years. Production is expected to grow in future with introduction of a hydroponic system at the Tebughna School. Program staff are focused on slow, measured and manageable growth. All fertilizers and compost are organic; the garden operates from renewable energy; and food is sold to support the economic future of the project.

As the program has evolved over the past five years, program staff have learned from experiences and improved upon previous years, whether testing crops, investing in infrastructure, offering food tastings and free samples to increase sales, or hosting educational partnerships and programming. Program staff have worked with a variety of sales and donation outlets for the produce to determine which will be a sustainable mix for the program, including a weekly Tyonek Garden market, a glass-door refrigerator at the Tribal Center, sales to the Tebughna School, as well as sales in Anchorage and through the Anchorage Food Hub. To make fresh produce available to those who might not have the cash resources to purchase it, the program makes produce donations to the Elders' Lunch Program and to tribal Elders for cooking at home; offers 'Veggie Bucks' to spend at the garden market in exchange for volunteer help in the garden; and has enrolled in the federal Supplemental Nutrition Assistance Program (SNAP), formerly the federal food stamp program.

Tyonek Grown is meeting its program purpose of enhancing food security, as well as its original goal to enhance the availability of fresh organic vegetables through the Tyonek Garden.

Recommendations

- Include metrics drawn from the support tools provided in this evaluation in TTCD's annual report to continue to document and communicate the program's progress and successes.

Future Direction

As the program has grown and evolved over time, the goals for Tyonek Grown have expanded to include four target areas for the program's next phase of development:

1. Provide technical and management assistance for the Tyonek Garden in accordance with NVT goals.
2. Build capacity within the Tyonek community to manage the Tyonek Garden for its long-term success and sustainability.
3. Increase the Tyonek Grown program's ability to sustain itself financially.
4. Support the rural Alaska food system by demonstrating and promoting sustainable agriculture practices using the Tyonek Garden and available outreach avenues.

Within each of these areas, strategies and measurable objectives have been identified to track progress toward each goal, summarized in the Tyonek Grown Goals, Strategies, Objectives and Metrics chart on pages 20-24.

Recommendations

- Tailor the Future Direction matrix of goals, objectives and metrics to specific targets and track progress. Similarly refine the poster version and use it as an at-a-glance reminder of strategic direction for the garden in TTCD offices or at the garden. Use the dashboard workbook to help track progress toward targets and document trends for other outcomes.

Metrics and Data Collection Processes

Quantitative data about crops, harvest, sales and distribution are currently being collected. Crop and harvest data are tracked well, although sales and distribution data have been tracked inconsistently, as have data about stakeholder perceptions and program outcomes. This evaluation is supported with a companion dashboard Excel workbook to help track key metrics and indicators toward Goals, Strategies, and Objectives, revised Harvest and Sales Record Sheets to illustrate recommended short-term adjustments, strategic plan poster template, and sample survey questions.

Recommendations

- In the short term, try the suggested changes to the Harvest and Sales Record Sheets and recording process. In the long term, when an option becomes cost-feasible, invest in a web-based Point of Sale (POS) system to electronically track sales and distribution of produce.
- Use surveys to measure and evaluate garden impacts on community health, lifestyle habits, and youth development outcomes. To the extent possible, work with partners to incorporate questions about the garden into existing surveys. Qualitative data about the impacts of the Tyonek Garden on the community, including general community health and youth development outcomes can be tracked using surveys for a) teachers/students, b) interns, and c) community residents in general.
- Explore the use of community garden data collection apps and similar tools that continue to be developed and improved
- Work with members of the Alaska Food Policy Council to recommend improvements to the SNAP program Mobile Market app to increase its data collection functionality and flexibility of use in Alaska markets.

Introduction

Purpose of this Evaluation

The Tyonek Tribal Conservation District (TTCD) has operated the Tyonek Grown Program since 2012. During these five years, the program has grown considerably. This evaluation is intended to help:

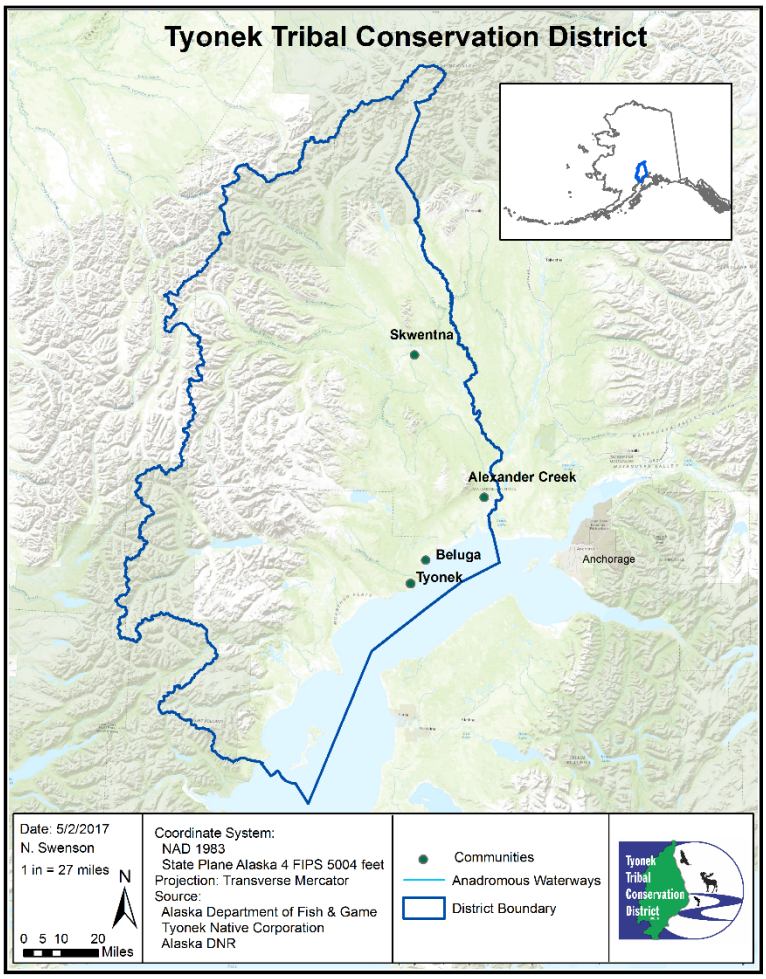
- **Program Evaluation:** Show what the Tyonek Grown program has accomplished and whether it is meeting its goals.
- **Future Direction:** Think about where to go in future and whether the program goals need to be adjusted.
- **Metrics and Data Collection Processes:** Establish metrics and processes for data collection to better track and measure program performance.

Acknowledgements

This evaluation was completed with helpful insight from the Tyonek Tribal Conservation District (TTCD), the Native Village of Tyonek (NVT), Tebughna School teachers, the Tyonek Elders Program and Health Department, Tyonek Garden interns, and Tyonek community members. The evaluators would like to express their gratitude and admiration for all the energy and enthusiasm of the Tyonek community and extended community who make the Tyonek Grown program and gardens possible.

This evaluation was funded by the USDA National Institute of Food and Agriculture through the Beginning Farmers and Ranchers Development Program.

Program Evaluation



Tyonek Tribal Conservation District (TTCD)

The Tyonek Tribal Conservation District (TTCD) is a nonprofit 501(c)(3) organization that addresses local issues through community-driven conservation activities. TTCD is a non-regulatory agency. TTCD's mission is to conserve, enhance, and encourage the wise use of natural resources. The District shares its boundaries with Game Management Unit 16B, and includes Tyonek, Beluga, Shirleyville, Alexander Creek, and Skwentna. The role of the TTCD is to provide technical and financial assistance to landowners and stakeholders within the District to help them achieve their conservation goals.

TTCD is guided by three core values: to meet the needs of district stakeholders, to form cooperative relationships, and to use what the earth has to give. TTCD strives to accomplish its mission through cooperative relationships with any and all interested parties.

The Tyonek Tribal Conservation District has four strategic directions:

- Monitor and restore fish and wildlife habitat.
- Improve food security through community agriculture.
- Support sustainable practices through waste reduction and energy conservation.
- Provide conservation education and outreach.

Tyonek Grown Program

Program Purpose

The Tyonek Grown program addresses TTCD's strategic direction to improve food security through community agriculture.[1] Since 2012, TTCD has worked with the Native Village of Tyonek (NVT) to develop an agricultural program with a goal of enhancing food availability by providing fresh organic vegetables in

[1] Food security is defined as physical, social and economic access to sufficient safe and nutritious food that meets dietary needs and food preferences for an active and healthy life.

Tyonek, a remote, off-the-road-system community in rural Alaska. The program's goals have expanded over time to include serving as an example to other rural Alaska communities and Tribal Conservation Districts interested in pursuing community agriculture.

Community Needs and Context

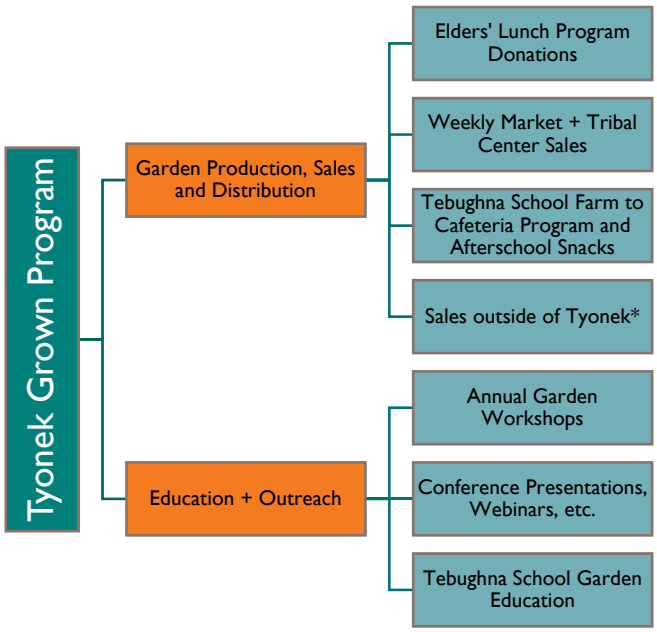
The Native Village of Tyonek, which is home to 182 residents, is located 43 miles southwest of Anchorage. More than 88 percent of residents are of American Indian/Alaska Native heritage. Like many other Alaska Native villages, the community is only accessible by boat or plane. Although most households practice subsistence (hunting, fishing, and harvesting wild foods from the area), much of Tyonek's food needs are met through purchased food. Because there is no grocery store in Tyonek, residents must either fly to Anchorage and bring groceries back or pay air freight costs of 39 cents per pound (in 2017) to ship groceries from Anchorage. Because perishable items like fruits and vegetables are difficult to ship and often expensive, village residents tend to purchase processed foods with preservatives for increased longevity, which contributes to a growing incidence of diabetes and other health problems. The Tyonek garden provides increased access to fresh produce to supplement subsistence, reduce the need for expensive store-bought food from Anchorage, and increase healthy food choices available to residents.

The Tyonek Native Corporation leases the land for the garden to the Native Village of Tyonek (NVT). The garden is owned by NVT, which has asked TTCD to be technical managers of the garden. TTCD currently manages organic vegetable production, soil and nutrient management, an educational program, and seasonal garden employees. The goals of the Tyonek people guide what is grown, how it is grown, and how food is distributed. The garden has grown into a 1.5-acre operation (of which 0.75 acres are currently cultivated) with two Natural Resources Conservation Service (NRCS)-funded high tunnels (48 feet by 22 feet each), solar-powered irrigation and ventilation systems, 15 outdoor raised beds, over 2,000 row-feet of potatoes and mixed vegetable crops, perennial fruits, and plans for expansion in the coming years. All fertilizers and compost are organic; the garden operates from renewable energy; and food is sold to support the economic future of the project.

The Tyonek Grown program has partnered with the Tebughna School (grades PK-12) to involve Tyonek youth in gardening activities. Tyonek youth have early exposure to the subsistence lifestyle including salmon fishing, moose hunting, berry picking, and more. However, the community lost its agricultural practice over the few decades, the availability of fresh healthy produce year-round is still extremely limited, and cheaper processed foods are still being shipped in to the community. The garden program is helping to create a local community of garden knowledge that has the potential to establish a culture of local production in Tyonek. For communities outside of Tyonek, the Tyonek Grown program TTCD has also hosted three annual hands-on workshops with more than 24 participants at the Tyonek Garden (2015-2017) and has provided community gardening training and technical assistance to over 350 individuals from around Alaska (2015-2017) through the Tyonek Grown outreach and education programming.

Current Program Activities

Figure 1. Tyonek Grown Program Activities



*Sale outlets include participation in the Anchorage Food Hub, and distribution to select restaurants and buyers in Anchorage.

Garden Operations

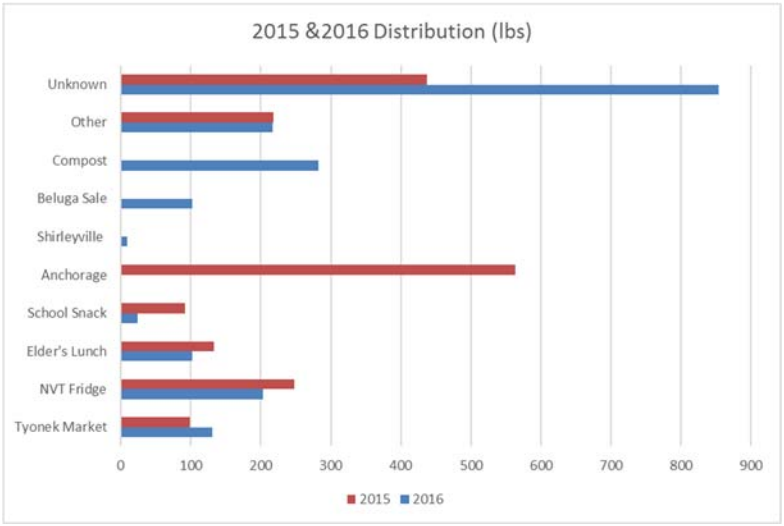
Each year, TTCD and NVT work together to ensure community goals and needs are being met. Garden activities include:

Building the Garden: The physical garden infrastructure (raised beds, irrigation system, and high tunnel) is nearly complete. Of the 1.5 acres of land available for the garden, about ¾ of an acre is being farmed currently.

Garden Administration and Management: TTCD currently acts as the garden's technical manager. TTCD has expressed the goal that the garden will become a financially self-sustaining agricultural program, with NVT taking primary responsibility for garden production, sales and distribution. TTCD would then be able to focus more on outreach and education, while supporting NVT with technical assistance as needed. As of 2016, Tyonek Grown has a Tyonek-based Garden Manager who provides oversight for garden operations and interns.

Garden Production: The garden team reviews each year's planting plan with the NVT Council, and volunteers help in the garden. With a strong agricultural background, TTCD's Conservation Director Nicole Swenson teaches garden staff and volunteers about soil management and composting. Through the Tyonek Grown program, Tebughna School students have the most significant involvement in the garden: students plant almost all the starts, water and maintain the garden, transplant seedlings, and harvest produce. In the spring, TTCD hosts a blessing ceremony where students transplant the plant starts into the soil. Students are also involved in harvesting potatoes in the fall. Both events are accompanied with dramatic increases in need for labor at the garden, making the partnership with the Tebughna School a central component of the Tyonek Grown program.

Produce Sales, Donations and Distribution: Produce is first donated to the Tyonek Elders' program. The Tyonek Elders' Lunch program has sourced produce from the Tyonek Garden since 2012. Tyonek Grown gives as much to the elder's lunch program as they will take. Interviews with Tyonek staff revealed that attempts to provide a variety of produce directly to elders were not successful: many residents did not know how to prepare the produce in their homes, and in some cases health issues prevented them from preparing and eating the available produce. Tyonek Grown also contributes produce to Tebughna School Snacks (in 2015, 85 pounds of Tyonek Grown produce was served as school snacks). TTCD has begun selling Tyonek Grown produce to the Kenai Peninsula Borough School District for incorporation into the Tebughna School lunch program. The Tebughna School lunch program will feature Tyonek Grown vegetables starting in the fall of 2017 with plans to continue in the future. The Tyonek Grown hydroponics project in the school will also be used to provide fresh produce in the school lunch program this school year (2017-2018).



Produce is sold at the Tyonek farmers' market on Wednesdays. A small amount of produce has been sold in Tyonek's neighboring communities of Beluga and Shirleyville. Unsold produce from the Tyonek farmers' market is sold at the Tyonek Tribal Office. A glass-door refrigerator was installed at the Tribal Center to increase storage capacity and accessibility to produce for Tyonek community members. NVT's Environmental Department staff who work at the Tribal Center help with sales from the refrigerator. Some produce is sold to tribal members in Anchorage on Thursdays (at the CIRI building in 2016), and at TTCD's Anchorage offices. Weekend markets are challenging because TTCD staff work during the week and are generally unavailable for support on weekends. In 2017, Tyonek Grown began selling produce through the Anchorage Food Hub, an online platform that allows residential and restaurant customers to order from the garden and have the produce delivered to a convenient drop-off location.

Education, Outreach and Youth Involvement

Education and youth involvement has always been an important goal of the Tyonek garden. Education and outreach activities include:

Outreach and education for Tyonek: The Tyonek Grown program involves students in nearly every aspect of garden production. The Tyonek Youth Internship program employs between four and six youth to work the Tyonek Garden each summer. There have also been a few cooking demonstrations. In the future, TTCD and NVT could collaborate with partners who could provide classes or workshops on nutrition, food storage and preservation techniques for garden produce.

Outreach and education to other communities: TTCD provides general training and technical assistance for other rural Alaska communities interested in starting garden/farming projects. This is completed through various program pamphlets, presentations, videos, community visits, workshops, and online resources. The Tyonek Grown Summer Training is the highlight of these activities: a multi-day hands-on summer training

event for participants from Tribal Conservation Districts and Alaska Native Villages interested in community gardening. TTCD has also provided Rural Farm Startup Facilitation, multi-day hands-on training and technical assistance for other rural Alaska communities interested in starting garden/farming projects.

Program Resources

Tyonek Grown Program Partners

The Tyonek Grown program is a partnership among several entities.

- The **Tyonek Native Corporation** owns the land the garden occupies.
- The **Native Village of Tyonek (NVT)** leases the land from the Tyonek Native Corporation. NVT owns the garden, is responsible for infrastructure, and sets long term goals for the program. NVT also helps sell Tyonek Grown produce from the Tribal Center. NVT manages the Elder's Lunch Program.
- The **Tyonek Garden Committee** is a group of three to six individuals selected by the NVT IRA Council to work directly with TTCD to set long term goals for the Tyonek Garden.
- **Tyonek Tribal Conservation District (TTCD)** manages the garden at NVTs request and is the owner and manager of the Tyonek Grown program.
- TTCD coordinates with the **Tebughna School** to involve youth in all aspects of the garden. Teachers include garden activities in school curricula and after-school programming.
- Tyonek Grown produce is donated to elders for use at home as well as to the **Tyonek Elders' Lunch Program,** where it is featured in elders' lunches.
- **Future Educational Partners:** TTCD is interested in a partnership that uses the garden to provide nutrition education to community members, as well as education and support for preservation methods for produce (e.g., University Extension).

In addition to program partners, the following organizations host sales outlets for Tyonek Grown produce:

- TTCD works with various partners to hold Anchorage sales, including **CIRI**, **Southcentral Foundation**, and **Tyonek Native Corporation**.
- **Anchorage Food Hub** is managed by Cook Inlet Keeper and provides an online sales outlet.

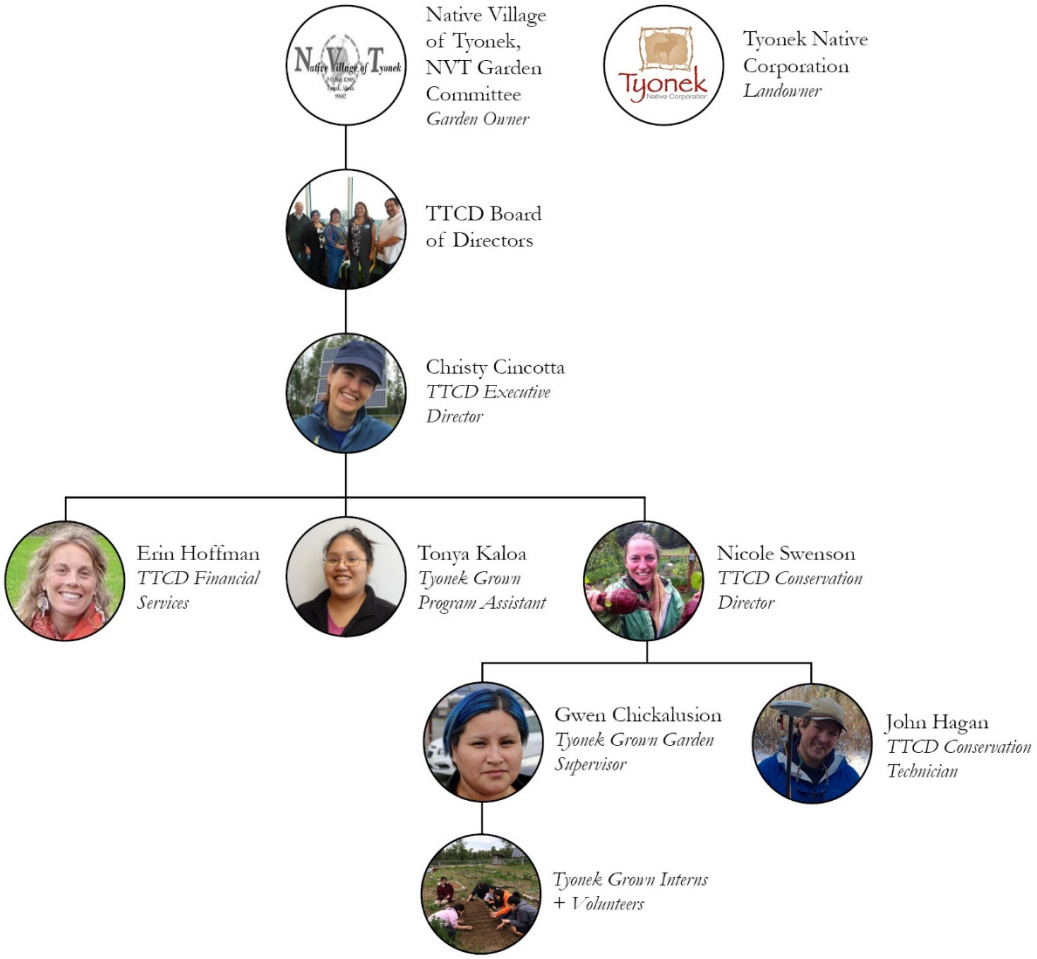
Tyonek Grown Staff and Volunteers

When NVT asked TTCD to become the technical manager of the Tyonek garden in 2012, the program was staffed primarily by TTCD Executive Director Christy Cincotta and NVT Community Health Representative Annabelle Goozmer. In 2014, TTCD Conservation Director Nicole Swenson, Program Assistant Tonya Kaloa, and four youth interns were hired to further grow and operate the garden. Gwen Chickalusion began working as the garden manager in 2015 to help oversee the day-to-day operations of the garden. Tyonek Grown is currently staffed by:

- Nicole Swenson, TTCD Conservation Director manages the Tyonek Garden and directs the Tyonek Grown program.
- Christy Cincotta, TTCD Executive Director provides administrative and financial oversight for the organization, manages staff, works with contractors and collaborates with the TTCD Board of Directors to execute Board decisions.

- Erin Hoffman, MSW, Innovative Funding Owner and Project Lead is contracted by TTCD for financial services, grant writing and grant management.
- Tonya Kaloa, Tyonek Grown Program Assistant.
- John Hagan, TTCD Conservation Technician.
- Gwen Chickalusion, Tyonek Grown Garden Supervisor (2016-2017), Tyonek Garden Committee member, NVT Council Member, and TTCD Board of Directors' Vice Chair. As the cafeteria manager at the Tebughna School, Gwen has also incorporated Tyonek Grown produce into the school snack program.
- Up to six summer youth interns.
- Volunteers (14 volunteers have provided a total of 156 documented volunteer hours to date).

Figure 2. Tyonek Grown Program Organizational Chart



Other Resources

Investments in garden infrastructure has increased the amount of produce the garden produces each year and allows the program to extend the garden's relatively short growing season. Current garden infrastructure includes:

- Garden fencing around the area lot
- Fifteen outdoor raised beds
- Two 22-foot by 48-foot hoop houses, each with 14 raised beds inside
- Three 70-foot by 60-foot plots of long planting rows
- One 25-foot by 60-foot plot of short planting rows
- A large compost area
- A solar powered drip irrigation and ventilation system
- Two-tank water reservoir
- A storage shed
- A large, decommissioned wooden boat converted into a planter in front of the Tribal Center
- Hydroponics growing system at the Tebughna School

Tyonek Grown Lessons Learned

Program History and Development

2007	• NVT obtained funding for fencing and a shed at the garden site.
2010	• NVT cleared land for the community garden site, and the shed was installed.
2012	• TTCD began working with NVT to assist with completion of the garden, holding community planning meetings in Tyonek, and designing the garden and irrigation system. • The program obtained a small tiller. • Community members prepared the garden, finishing clearing, leveling and fencing the land, cutting logs for raised beds, and building and filling the raised beds with soil. Fencing around the garden was completed. • The first growing year, Tyonek youth seeded the vegetable starts in school and at the tribal center, later replanted the starts in the garden and tended them over the summer. They planted three varieties of seed potatoes and harvested 300 pounds of potatoes, which were then distributed among community members.
2013	• Tyonek Grown installed two high tunnels, a solar-powered irrigation system (to replace manually irrigating the garden by hauling buckets from a nearby lake), and solar power to run the fans in the high tunnel. • TTCD hired a Garden Coordinator and started the weekend market in Tyonek. • Harvested produce was shared with the community.
2014	• Two full time staff (Nicole Swenson and Tonya Kaloa) began working for TTCD in Anchorage to continue to develop the Tyonek Garden; Tonya Kaloa is a Tyonek tribal member. • Youth interns were hired (up to four interns during a season). Because some Tyonek tribal members live at least part of the year in Anchorage, the internship program requires that interns live in Tyonek at least in the summer if not year-round, are age 14 or older and work three days per week. • Because of the previous years' infrastructure and staffing investments, the garden produced more food, including: tomatoes, corn, pumpkin, zucchini, spinach, lettuce, celery, herbs, peas, green beans, broccoli, kale, cauliflower, cabbage, radishes, potatoes, beets, carrots, rhubarb, and strawberries. • Tyonek elders and Anchorage elders who are Tyonek tribal members received a total of 140 pounds of the first and last harvest, with additional weekly contributions made to the Elder's Lunch Program totaling 170 pounds of produce. • The 2014 season was the first season produce sales were used to support funding for future garden seasons. Tyonek Grown had become a 1.5-acre operation with two NRCS-funded high tunnels (48 feet by 22 feet), solar powered irrigation and ventilation systems, 15 raised beds, 1,000 row feet of potatoes, 45 rhubarb plants, 15 raspberries bushes, and plans for expansion in the coming years. • Produce was sold within Tyonek and flown to Anchorage with TTCD staff, who regularly travel between Tyonek and Anchorage.

2015	• 2015 was the first year Tyonek Grown offered a hands-on community gardening workshop. Three Tyonek residents and five people from other communities attended the workshop. • A walk-behind tractor was purchased. • A new field was added. • The garden program within TTCD was named the Tyonek Grown Program. • A drip irrigation system was installed, which increased the ease and efficiency of watering the crops.
2016	• In 2016, the community gardening workshop was offered in Tyonek and in Palmer. • Local resident and Tyonek tribal member Gwen Chickalusion was hired to supervise the interns from Tyonek, so that Nicole Swenson would no longer have to fly to Tyonek three times each week for garden and intern supervision. • Produce yields rose to 2,000 pounds, and the produce that was sold generated $3,000 in sales (additional produce was donated or lost to spoilage). • A glass-door refrigerator was installed at the Tribal Center for produce not sold at the weekly market (NVT Environmental Department staff at the Tribal Center help with sales).
2017	• Tyonek Grown hosted its third annual Tyonek Grown Workshop with eight participants from across Alaska. • Another field was added to increase potato production. • A hydroponics system was installed within the Tebughna School. • A mower was added to manage cover crops for soil fertility.
2018	• In 2018, Tyonek Grown will have a hydroponic system at the school (currently in development). TTCD owns the system, but it will be operated in collaboration with the Tebughna school.

As the program has evolved over the past five years, much has been learned and observed about what works best for the program. Observations and interviews with residents and staff revealed that:

- The garden has been experimenting with **different crops** to see which grow the best in Tyonek and which crops will sell. Because of the climate, root vegetables and some cold-weather leafy greens perform the best.
- **Garden infrastructure** (hoop-houses, irrigation system) dramatically increased the amount of produce grown and the efficiency of garden activities. This year (2017), TTCD and Tebughna School are setting up a hydroponic growing system to extend the season, in response to feedback from TTCD surveys indicating that residents want fresh **produce through the winter.** TTCD is also exploring the potential for cold storage.
- **Donations** to the Elders' Lunch Program has greatly benefitted the elders by improving the quality of the lunches and decreasing costs of the program. Donating produce directly to elders to prepare for consumption at home has been scaled down to potato donations only; other crops proved stressful to Elders who do not know how to prepare the food and did not want to accept it.
- Many produce varieties have been unfamiliar to the community. Tyonek Garden staff have been creative about finding opportunities to introduce community members to eating and cooking with vegetables that are new to them. For example, giving **free samples** at the market resulted in increased sales after community members tasted the produce. TTCD has made recipe sheets available at the Tyonek Garden market, and Tribal members have shared food recipes informally and through cooking demonstrations at the school.
- The garden has been a learning experience for the whole community, but the garden's **educational partnership** with the Tebughna School has been integral to the garden's success. School teachers use the garden to demonstrate lessons in a variety of subjects, and the students do many of the planting,

tending and harvesting activities. Tyonek people wanted gardening in their community because the practice had been lost over the last few decades. Because the village of Tyonek has not had a strong agricultural tradition, education in gardening skills, nutrition, preparation and preservation of garden produce has also been necessary in some form to incorporate gardening into local everyday culture.

Current Program Challenges

The Tyonek Grown program's current challenges revolve around becoming more self-sustaining in the long-term. This includes a desire to (1) increase the program's earned income relative to other revenue sources, (2) improve the efficiency and effectiveness of the garden's systems (including data collection and reporting), and (3) transfer garden management responsibilities from TTCD to NVT to increase the level of community ownership and to allow TTCD to focus more on educational and technical assistance activities. Program staff and leadership seek to balance the program's original goals of meeting local needs and desires for food security, education and healthy lifestyle support with the additional goal of generating increased revenue from crop sales to replace some amount of grant funding and sustain the operation in the long term.

Program Revenues

The Tyonek Garden has primarily been funded through federal and nonfederal grants, accounting for nearly 98 percent of program revenues. The remaining two percent of program revenue has come from earned income including produce sales and community education workshops. Grant funding has been critical for purchasing and installing the garden infrastructure needed to produce at a desirable volume given Alaska's relatively short growing season, for start-up costs, and for sustaining the education and outreach programming that is integral to the Tyonek Grown program. In light of the desire to shift more of the garden's management from TTCD to the Native Village of Tyonek, the Tyonek Grown program's leadership desires to increase the revenue earning potential of the garden activities to sustain garden staff wages and operating costs associated with sales and distribution of the produce.

One strategy to increase earned revenue is to identify high-value crops that can be sold at volume to restaurants and retail outlets, which is particularly challenging for the Tyonek Garden due to its remote location (which drives up the cost of getting produce to market), as well as the short growing season and relatively small land base (currently 0.75 acres, with long-term potential expansion to 1.5 acres), which have limited the volume of produce the garden can generate. However, local food currently has a very high popularity in Alaska. This challenge will become easier to manage as the program gains more data about the success of the hydroponic system, as well as which crops have been most productive and have the highest revenue-generation potential, particularly if program staff and leadership continue to network with area chefs and farmers markets to learn more about the types of specialty produce or value-added products that could be sourced from the Tyonek Garden for higher-end local/regional outlets. Depending on the crop or the product, any bulk production is likely to be slow because the program staff and leadership are committed to slow expansion of garden production in order to build a solid programmatic foundation.

The garden is also challenged to grow high-value crops at volume because the local community desires a wide variety of produce. The Garden faces the decision to increase crop diversity for residents or expand the production of a few more highly marketable crops. Because the community has little cultural context for agriculture in recent years, Tyonek residents may not know how to cook with or prepare a less common vegetable. With increased diversity, Garden staff have learned that coupling new crops with preparation

education and free samples helps increase sales of unfamiliar produce. Outside the community, Tyonek Grown began selling produce in 2017 on the Anchorage Food Hub, an online platform that allows the garden to sell irregular quantities of produce to a wider customer base. Without a required minimum volume of produce, the Food Hub may help the Garden focus on cultivating more diverse crops.

At the time of this evaluation, TTCD has begun to develop a business plan to address these financial program challenges. While this program evaluation is not meant to replace that effort, helpful financial information has been discovered through the evaluation process. A summary and brief analysis of that information is included among the attachments.

Systems Management

Program staff and leadership also seek to increase program efficiency, which requires effective systems for managing garden activities, collecting data and tracking progress toward goals. Improvements to sales and distribution are an immediate concern. Program staff and leadership seek to track sales and distribution more consistently and with a less time- and labor-intensive process. The Tyonek Grown program currently utilizes a small kitchen scale to record harvest weights and assign prices to individual vegetables with stickers prior to sales. The small scale could be replaced with a larger digital scale that can be zeroed out to quickly monitor larger quantities of produce; a digital scale could also allow produce to be weighed and sold per pound at the market register. Sales are tracked with a written handbill and a manual entry into a logbook. Tyonek Grown staff recognize the value of an updated point-of-sale system; however, even the least expensive options are not feasible given current allocations and revenue sources.

TTCD seeks to strengthen the mission-driven element of the Tyonek Grown program by tracking health and educational outcomes. Tracking the long-term effects of the community garden on residents' health with certainty is difficult. Individual health records are protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Measurable changes in health are likely to be influenced by numerous factors, including but not limited to participating in garden activities or eating vegetables from the Tyonek Garden. Most community gardens in the U.S. measure health benefits to their communities through surveys that target the frequency of vegetable intake and physical activity levels, as well as perceptions of the garden's impact on food security, general health, and mental/emotional wellbeing. The Tyonek Health Department conducted a resident health survey in 2015 that measures behavioral and physical heath. If this survey were to be given on a regular basis, the Tyonek Health Department and TTCD could work together to include specific questions related to exercise gained from participating in garden activities as well as dietary intake, the consumption of garden produce, other healthy foods and the overall health of the resident, with possible attention to the presence of conditions affected by diet and activity level, such as obesity or diabetes. If implemented, this survey could be distributed on an annual or bi-annual basis to help monitor the effects of the garden program over time.

TTCD has expressed an interest in creating a positive learning environment for Tyonek youth, which they have largely accomplished through an annual internship program and a partnership with the Tebughna School. TTCD faces a challenge of understanding their impact on the youth in the community. Through interviews with residents, teachers and youth, this evaluation provides a qualitative snapshot of the positive effects the garden has had on Tyonek youth. However, without specific metrics for evaluation, these outcomes are difficult to demonstrate to support requests for additional funding or program expansion. Most community gardens in the U.S. measure the impacts of gardens on youth development through surveys that target the gardening, leadership and communication skills acquired through garden programs, as well as youth

participants' general perception of the garden's impact on their engagement in community life. Tebughna School teachers use the Tyonek Garden as a learning tool. TTCD could work with the school to give a survey or evaluation to students at the beginning and end of each year, with questions aimed at measuring the impact of the garden.

Garden Management

As the program grows and management of the garden transitions to NVT, the hope is that TTCD employees will spend less time in Tyonek and focus more on education and outreach activities, technical assistance and trainings to help generate additional revenue and expand the impact of the program. Currently TTCD staff spend a considerable amount of time and money flying between Anchorage and Tyonek to help manage garden activities, produce sales and distribution. Reducing these costs could improve the financial viability of the Garden.

Future Direction

Program Goals and Strategies

The original purpose of the Tyonek Grown program was to increase food security in the Native Village of Tyonek. The program has grown to include an expanded future strategic direction outlined below. Measurable objectives identified to reach these goals and strategies are included in the following report section: Metrics and Data Collection Processes.

Goal 1: Provide technical and management assistance for the Tyonek Garden in accordance with NVT goals.

1.A. Work with the NVT Garden Committee annually to discuss management options and review goals.

1.B. Manage Tyonek Garden under an organic and sustainable management framework.

1.C. Maximize produce served in the Tyonek Elders' Lunch Program and shared with elders for cooking at home.

1.D. Maximize participation with, and produce served at, the Tebughna School.

1.E. Maximize produce sales at the weekly Tyonek Grown farmers' market and Tribal Center.

1.F. Increase year-round access to Tyonek Grown produce.

Goal 2: Build capacity within the Tyonek community to manage the Tyonek Garden for its long-term success and sustainability.

2.A. Increase or maintain levels of student participation in garden education at the Tebughna School.

2.B. Expand or maintain interest and participation in the Tyonek Grown internship program.

2.C. Continue and/or expand volunteer program.

2.D. Incrementally increase the responsibility of Native Village of Tyonek staff, interns and volunteers in the management of garden production, sales and distribution.

Goal 3: Increase the Tyonek Grown program's ability to sustain itself financially.

3A. Incrementally increase the responsibility of Native Village of Tyonek staff, interns and volunteers in the management of garden production, sales and distribution.

3.B. Increase earned income from produce sales, workshops, and other sources.

3.C. Streamline garden systems including production (long-term), sales and distribution (near-term).

Goal 4: Support the rural Alaska food system by demonstrating and promoting sustainable agriculture practices using the Tyonek Garden and available outreach avenues.

4.A. Provide community gardening education and technical assistance for rural Alaska communities.

4.B. Share the Tyonek Grown story.

4.C. Continue and expand management of rural Alaska garden Facebook group.

Metrics and Data Collection Processes

Measuring Program Progress

As the Tyonek Grown program has expanded and stabilized, TTCD has begun to look toward long-term program viability and success. Through this evaluation, TTCD now seeks to establish a set of measures that can be compared annually to help monitor and guide program performance. To measure progress toward future goals, this evaluation ties each of the goals in the previous chapter to a set of strategies with measurable objectives, target dates and metrics to track progress in reaching them (targets are intended to be defined and updated by TTCD). All objectives and associated metrics have also been incorporated into an Excel dashboard workbook that TTCD can use to update and compare annually.

The metrics proposed in the table on the following pages include, to the extent possible, data that are already collected or available. Some of the health or educational outcomes that TTCD would like to track may require working with partners to develop and implement questionnaires or qualitative evaluations to obtain useful information:

- The Health Department could monitor and share outcomes associated with increased vegetable consumption. Literature suggests flexibility, joint strength, blood pressure, cholesterol levels are all potential health indicators; also monitoring levels of diabetes or osteoporosis.
- Teachers could fill out a questionnaire describing how specifically and how much/often they use the garden as a teaching tool for students, including a description of the variety of subjects they incorporate (such as math, science, etc.) as well as their observations about the garden's impacts on student social/emotional learning, value of teamwork, etc.
- A survey or writing assignment could be given to students asking how the garden program has benefited them, what they have learned from it, and/or whether it affects their attitudes and achievement in other areas of life. Tyonek Grown could also set up a 'Yum and Yuck' taste test (suggested activity in the Farming Concrete Data Collection Toolkit) that allows the students to evaluate whether or not they enjoy fresh produce varieties from the garden before and after harvesting – and tasting – the produce.
- A questionnaire could be given to interns during and a period of time (e.g., six months to one year) after their internship about what they learned from it, how it has shaped their attitudes and perspectives, etc. The interns' supervisor could also be asked to comment on development outcomes among interns, related to participating in the garden program.

Following the table of Goals, Strategies, Objectives and Metrics, this evaluation examines the program's existing data collection processes and makes recommendations for improvements.

Figure 3. Tyonek Grown Goals, Strategies, Objectives and Metrics

Goals and Strategies *(what we want to do)*	**Objectives** *(how we're going to do it)*	**Metrics** *(how we're going to measure our progress toward getting it done)*	**Current Status** *(what's going on in 2017)*
Goal 1: Provide technical and management assistance for the Tyonek Garden in accordance with NVT goals.			
1.A. Work with the NVT Garden Committee annually to discuss management options and review goals.	Tyonek Grown meets with NVT Garden Committee [x# time(s)] each year to discuss management options and review goals.	Meeting notes or other documentation of discussions and any decisions made during meetings.	Tyonek Grown and NVT Garden Committee [met/will meet] on [DATE].
1.B. Manage Tyonek Garden under an organic and sustainable management framework.	Each year, [create/update] and follow an annual Tyonek Grown garden management plan that follows an organic and sustainable framework.	Written documentation of garden management plan.	TTCD has a 5-year crop rotation plan that is ending in 2017 and will need to be updated. The next iteration should include information on fertilizer application. We also have three years of NRCS soil management reports.
	By 2025, the amount of out-sourced compost used in the Tyonek garden will be less than 0.5 cubic feet per 100 square feet each year.	We would like to reduce the amount of compost (and therefore also fertilizer) in the garden over time. Perhaps a reasonable goal would be to try to reach a local vs non-local resource for compost over time.	
1.C. Maximize produce served in the Tyonek Elders' Lunch Program and shared with elders for cooking at home.	By [DATE/YEAR], Tyonek Grown produce is available to Tyonek Elders 10 months per year through the Elders lunch program and donated to elders to eat at home.	TTCD tracks the number of months during which produce goes to program and home donations to elders.	Elders and Elder Lunch Program are already taking as much as they can.
	By [DATE/YEAR], Tyonek Grown produce is served in the Tyonek Elders lunch 30 weeks per year.	TTCD tracks the number of weeks during which produce goes to elders' lunch program. 30 weeks per year is 75% of 10 months, assuming an average of four weeks per month.	
1.D. Maximize participation with, and produce served at, the Tebughna School.	By [DATE/YEAR], [x] pounds of produce are served to students at Tebughna School through the school snack program and farm-to-cafeteria each year.	School will track the number of lunches (especially if receiving Federal aid through school lunch program).	In 2017, Tyonek Grown completed the first transaction for produce with the KPBSD. To date 34 pounds of produce has been sold to KPBSD.
	By [DATE/YEAR], the number of Tyonek Grown student activities increases to [x#] per year.	Track number of activities per year with students.	insert

Goals and Strategies *(what we want to do)*	**Objectives** *(how we're going to do it)*	**Metrics** *(how we're going to measure our progress toward getting it done)*	**Current Status** *(what's going on in 2017)*
1.E. Maximize produce sales at the weekly Tyonek Grown farmers' market and Tribal Center.	By [DATE/YEAR], [x] pounds of produce are sold in Tyonek each year.	Probably easier to track pounds of produce sold to Tyonek residents at the Wednesday market and Tribal Office.	Because there is no grocery store in Tyonek, NVT put a refrigerator in the tribal center so people can purchase veggies throughout the week, not just at the weekly market. Total produce sold at the two outlets was 325.25 pounds during the 2016 season.
	By [DATE/YEAR], [x pounds or $] of Tyonek Grown produce is purchased by Tyonek residents with SNAP and/or Veggie Bucks.	Track SNAP and TG Veggie Bucks.	Garden volunteers can exchange time helping in the garden for Veggie Bucks to spend on produce. TTCD is enrolled to accept SNAP benefit cards as of 2017.
1.F. Increase year-round access to Tyonek Grown produce.	By [DATE/YEAR], Tyonek Grown produce is available to Tyonek community members [x# days/months] out of the year.	Track when TG produce is available through various distribution channels. As hydroponic system comes online, food preservation is implemented, etc. there might be year-round TG food available at market and Tribal Center.	The school is setting up a hydroponic garden. Tyonek Grown is exploring cold storage potential. If preserved, value-added Tyonek Grown foods become available, these could be included as well.
Goal 2: Build capacity within the Tyonek community to manage the Tyonek Garden for its long-term success and sustainability.			
2.A. Increase or maintain levels of student participation in garden education at the Tebughna School.	By [DATE/YEAR], the number of Tyonek Grown student activities increases to [x#] per year.	Track number of activities per year with students.	insert
	By [DATE/YEAR], student understanding of sustainable agriculture concepts increases so that 3 students lead the seed planting and transplanting instructions for younger students each year.		
2.B. Expand or maintain interest and participation in the Tyonek Grown internship program.	Each year, the number of Tyonek Grown interns includes at least four interns per year.	Count the number of interns each year. Could also track number of returning interns, internship applications vis-à-vis internships and/or length of time each individual spends at the garden, especially over multiple years, to indicate interest in the garden.	Tyonek Grown usually hires four to six interns each year. Some are returning interns from the previous year.

Goals and Strategies *(what we want to do)*	**Objectives** *(how we're going to do it)*	**Metrics** *(how we're going to measure our progress toward getting it done)*	**Current Status** *(what's going on in 2017)*
2.C. Continue and/or expand volunteer program.	By [DATE/YEAR], the number of Tyonek Grown volunteers increases to [x] volunteers per year.	Count the number of volunteers each year. Could also track length of time each individual spends at the garden, especially over multiple years, to indicate interest in the garden.	14 volunteers with 156 recorded volunteer hours between 2015 and 2017.
2.D. Incrementally increase the responsibility of Native Village of Tyonek staff, interns and volunteers in the management of garden production, sales and distribution.	By [DATE/YEAR], NVT contributes [x#] management hours to garden management each year.	Track the number of NVT garden management hours each year. TTCD and NVT could also work together to create a transition action plan and with milestones and desired timelines to provide a framework for incrementally increasing NVT responsibilities.	TTCD requests assistance on specific tasks throughout the season. We are not yet recording the length or type of activities.
Goal 3: Increase the Tyonek Grown program's ability to sustain itself financially.			
3A. Incrementally increase the responsibility of Native Village of Tyonek staff, interns and volunteers in the management of garden production, sales and distribution.	By [DATE/YEAR], NVT contributes [x#] management hours to garden management each year.	Track the number of NVT garden management hours each year. TTCD and NVT could also work together to create a transition action plan and with milestones and desired timelines to provide a framework for incrementally increasing NVT responsibilities.	TTCD requests assistance on specific tasks throughout the season. We are not yet recording the length or type of activities.
3.B. Increase earned income from produce sales, workshops, and other sources.	By [DATE/YEAR], earned income from produce sales, workshops and non-grant donations will meet or exceed [x%] of total Tyonek Grown Program revenue sources.	Track workshop and other educational programming receipts. Track the name of customer/market, amount of produce, sales, time allocated to each.	Earned income was two percent of total program revenues in 2015.
3.C. Streamline garden systems including production (long-term), sales and distribution (near-term).	By [DATE/YEAR], increase garden production by [$/lbs of produce] per 100 square feet. (long-term)	Track pounds produced, acres under production, sales or by percent of any of these. Quantify an estimate of dollars per pound for food grown and distributed.	Garden production is currently sustainable; improvements are being made.

Goals and Strategies *(what we want to do)*	**Objectives** *(how we're going to do it)*	**Metrics** *(how we're going to measure our progress toward getting it done)*	**Current Status** *(what's going on in 2017)*
	By [DATE/YEAR], source [$x or x lbs or x% of all] produce from the Tyonek garden for sales to primary sales outlets.	Track success with sourcing more produce to fewer outlets to reduce administration, e.g. Tebughna School farm-to-cafeteria program, Kenai Food Hub,[2] Arctic Harvest CSA[3] sales, etc.	Tyonek Grown is beginning to source produce from the Tyonek garden for the school cafeteria in 2017. The school has already sourced produce from the garden for the snack program.
	By [DATE/YEAR], identify and implement a better system to track and record produce sales and distribution; reduce the time spent on the program's business administration by [x hours].	Track staff time spent on business administration activities; will require slightly more detailed timesheets.	TTCD has researched point of sales systems and determined that current sales levels do not justify the investment.
Goal 4: Support the rural Alaska food system by demonstrating and promoting sustainable agriculture practices using the Tyonek Garden and available outreach avenues.			
4.A. Provide community gardening education and technical assistance for rural Alaska communities.	By [DATE/YEAR], TTCD teaches community gardening to [x] participants from [x] rural Alaska communities each year through the annual Tyonek Grown workshop, presentations, webinars and technical assistance to other communities.	TTCD tracks number of students/participation through workshop registration forms, reports from presentation hosts (or have a sign-in sheet at each presentation), reports from webinar (require name and community for sign-in), and technical assistance requests.	TTCD completed their third in person workshop for rural Alaska gardeners. TTCD is continuing attending conferences, giving presentation, hosting conference workshops, collaborating with ATCA, and is reassessing the need and structure for the Tyonek Grown in-person workshops.
4.B. Share the Tyonek Grown story.	By [DATE/YEAR], Tyonek Grown has been featured in [x] media stories (e.g., newspaper, magazines, academic or trade journals, radio or television news segments).	TTCD could track the number and reach (e.g., local, regional, state, national) of media placements (news, professional or scholarly articles TG is featured in, radio and TV news mentions); include the book	TTCD does not currently track the media reach of their programs. Tyonek Garden has been featured in news articles such as https://www.adn.com/culture/article/shannon-kuhn-students-tyonek-garden-classroom/2014/10/10/
4.C. Continue and expand management of rural Alaska garden Facebook group.	By [DATE/YEAR], grow Facebook group to [x] members.	Facebook reports the number of likes/members and data on user engagement. As the administrator, go to the Facebook page and click on "Insights" at the top to see what kind of analytics it can show you; decide which you want to track.	TTCD is the owner of a closed Facebook group in which the participants of the Tyonek Grown workshop participants are invited to join, share successes, and look for support and assistance on issues they face.

[2] Kenai Peninsula & Anchorage Food Hub is an online farmers' market. Each week, producers list products for sale. Customers choose products and place an order. Products are dropped off at a central location and customers pick up.

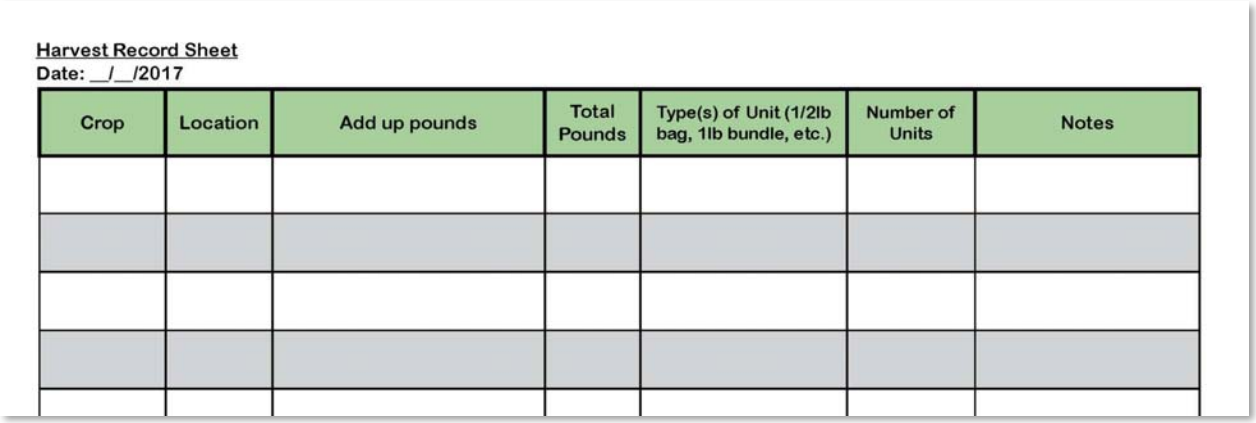
[3] Arctic Harvest Deliveries delivers fresh, local produce directly from member farmers to community supported agriculture (CSA) members and restaurants in Anchorage, specializing in the distribution of local, Alaska Grown produce.

Data Collection Process Analysis

The existing data collection process is described below, within the context of the overall existing Tyonek Grown harvest, distribution and sales process.

Harvest

Garden staff and interns harvest produce each week. As produce is harvested, the Harvest Record Sheet is filled out. All agree that the Harvest Record Sheet is easy to fill out, does not slow down the harvest, and provides helpful data. If harvested produce is designated specifically for the Elders' Lunch Program, it is noted in the Harvest Record Sheet, although the Elders' chef also accesses produce from the Tribal Center refrigerator on an as-needed basis; these donations are not recorded on the Harvest Record Sheet.



Harvest Record Sheet
Date: __/__/2017

Crop	Location	Add up pounds	Total Pounds	Type(s) of Unit (1/2lb bag, 1lb bundle, etc.)	Number of Units	Notes

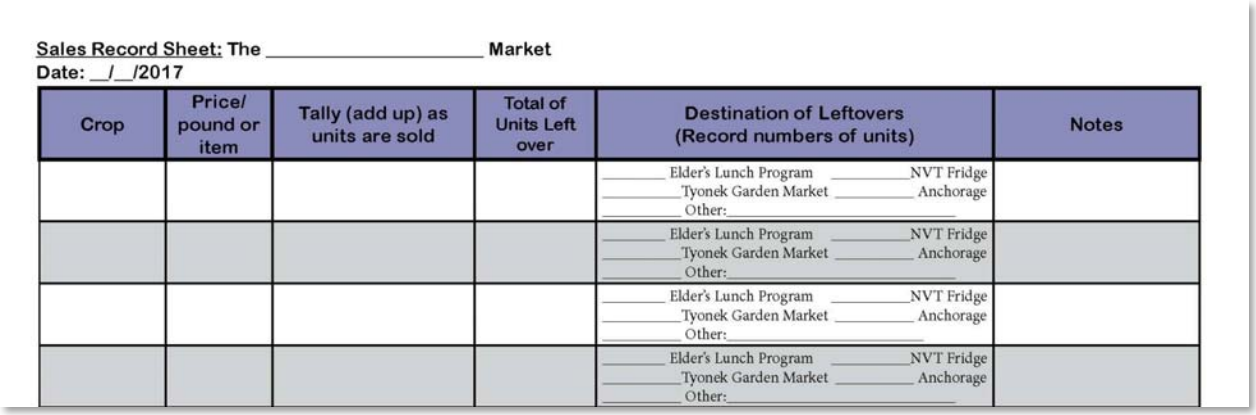
Sales and Distribution

After it has been harvested, produce is distributed to various sales outlets and a Sales Record Sheet is filled out. Sales outlets include:

1. **Tyonek Garden Market:** Produce is sold at the weekly Tyonek market at the Garden. The Garden Supervisor has been very proactive in getting people from Tyonek and neighboring communities to the garden market and Tribal Center Refrigerator to purchase produce. She posts on her personal Facebook page to get people out to the market, and has even traveled to the neighboring community of Beluga to deliver produce to a friend who now comes to Tyonek to pick up his order. (Tyonek Grown does not have its own Facebook page; instead Tyonek Grown activities are regularly posted on TTCD's Facebook page, in addition to grassroots promotion by Tyonek Grown supporters.)
2. **Tribal Center:** The Tribal Center refrigerator is stocked with produce as needed.
3. **Elders' Lunch Program:** Each week, Chris (the Elders' Lunch Program Manager) and Gwen (Tyonek Garden Supervisor) decide how much of which crops are needed from the garden for the elders' lunches. A Tyonek Garden staff member delivers the produce to the Tribal Center for preparation. Chris also gets food from the Tribal Center Refrigerator as needed to supplement direct donations from the garden.
4. **Elders' Home Distribution:** Each year, Tonya Kaloa at TTCD calls the Tyonek elders and asks if they want potatoes for home consumption. If the potatoes are accepted, TTCD staff deliver them to the elders.

5. **Anchorage Sales:** Market leftovers go to Anchorage for sales at TTCD offices, Southcentral Foundation market, CIRI market, or another outlet. If the produce does not sell quickly, it is down-priced or composted.
6. **School Sales:** The Tebughna School farm-to-cafeteria program is done through Kenai Foods. TTCD works directly with the Tebughna School cook and other staff to set up bi-weekly food orders. gives TTCD orders on a two-week schedule.
7. **Kenai Peninsula and Anchorage Food Hub Sales:** Tyonek Grown posts the crops and units available to the Food Hub website and accepts online orders throughout the week. Once a week, the orders are harvested and delivered to a drop-off point for delivery.

The Sales Record Sheet is a blend of Sales Records and Distribution Records. Tyonek Grown used to have a Distribution Record Sheet in addition to the Sales Record Sheet, but discontinued the Distribution sheet because of feedback that the multiple sheets were too cumbersome. Tyonek Grown staff are still unsatisfied with this system of tracking sales and distribution data, and would like to make this element of record keeping more efficient. Recommended improvements to the system are included in the Findings and Recommendations section of this report.



Sales Record Sheet: The _____ Market
Date: __/__/2017

Crop	Price/ pound or item	Tally (add up) as units are sold	Total of Units Left over	Destination of Leftovers (Record numbers of units)	Notes
				_____ Elder's Lunch Program _____NVT Fridge _____Tyonek Garden Market _____ Anchorage _____ Other:_____	
				_____ Elder's Lunch Program _____NVT Fridge _____Tyonek Garden Market _____ Anchorage _____ Other:_____	
				_____ Elder's Lunch Program _____NVT Fridge _____Tyonek Garden Market _____ Anchorage _____ Other:_____	
				_____ Elder's Lunch Program _____NVT Fridge _____Tyonek Garden Market _____ Anchorage _____ Other:_____	

The Sales Record Sheet is currently filled out during sales at the market, only. A Sales Record Sheet is posted at the Tribal Center Refrigerator, but is not filled out consistently. Observations of staff filling out the Sales Record Sheet revealed that the categories as written require a great deal of thought and translation while completing sales transactions. The Sales Record Sheet is essentially intended to be a summary of all receipts and a record of where unsold produce is distributed. Ideally, Tyonek Grown would invest in an electronic web-based Point of Sale (POS) system to track sales of individual crops per sales outlet and note distribution of leftover inventory in that system (if its features allow) or in a simplified Distribution Record Sheet. A web-based system with could be accessed by all Tyonek Grown staff on different devices to accommodate the complexity of staffing and produce distribution among Anchorage, Tyonek and specific distribution points. Transitioning to a web-based POS system would require that all staff involved in sales and distribution have access to a device that supports the POS software and the ability to access wireless or cellular data. Tyonek Grown does not have an electronic POS system because available options are not cost effective for the program's current sales volume. The Alaska Quest Cards (used in Alaska for Supplemental Nutrition Assistance Program, or SNAP benefits at groceries and farmers markets) sales transactions do not produce itemized receipts; market staff must fill out an itemized receipt in addition to the card swipe if the data are to be recorded. The Garden Supervisor consistently writes out itemized receipts for all sales, but other garden staff are less consistent in generating receipts.

Suggested improvements to the format and process of filling out the Harvest and Sales Record Sheets are included in the Findings and Recommendations section of this report.

Methodology

Data Collection

Agnew::Beck conducted a work session to review initial models and brainstorm with TTCD staff about the purpose of the evaluation, history and future direction of the Tyonek Grown program, and key stakeholders or partners that should be involved in the evaluation. Additional meetings were held with TTCD staff post evaluation to review and confirm preliminary findings.

Agnew::Beck reviewed background materials about the program from TTCD including: an informational booklet, TTCD website, sample grant reports (with information about the purpose of the program, program activities, goal attainment, and community-level indicators of participation levels), a TTCD community survey measuring the satisfaction and importance of the Tyonek Garden to Tyonek residents, a draft Tyonek Grown business plan (in progress), Harvest and Sales Record Sheets, and TTCD's executive dashboard (used to report on strategic goal attainment to the TTCD Board).

Agnew::Beck also conducted a literature review of community garden project evaluation tools, as well as the health and development outcomes commonly associated with and measured for community gardening projects/programs. Key informant interviews were conducted by telephone with the Garden Supervisor and Tebughna School Principal.

On August 9, 2017, the Agnew::Beck team visited Tyonek to observe the garden and program activities, and to meet with key representatives from the community. The site visit included a garden tour, observation of the afternoon market sales, and interviews with the Tyonek Grown Garden Supervisor, interns, Elders' Lunch Program Coordinator, Tyonek Health Department and Tebughna School teachers (a site visit report is included among the attachments).

Analysis

Background information from TTCD was reviewed and synthesized with a literature review and information gleaned from site visit observations, meeting discussions and interviews. Where questions arose, Agnew::Beck researched possible solutions and reviewed them with the Tyonek Grown project team. All future goals, objectives, metrics and recommendations are grounded in the expertise of the Tyonek Grown project team as to the systems and processes that can be feasibly integrated into their day-to-day activities.

How to Use the Findings

Findings and Recommendations

Findings and recommendations are based on an analysis of the information gained through discussions with key informants, literature review, an onsite visit to the Tyonek Gardens, and materials shared by TTCD with the consultant team during 2017. These findings and recommendations represent the best analysis possible during this time, recognizing that some elements are likely to change as TTCD and Tyonek Grown staff gain increased experience and undergo program evolutions. Goals and objectives were developed based on a review of program documentation provided by TTCD, as well as through meetings and discussions with TTCD. As program staff work on achieving goals and collecting data toward the targets identified to measure

progress toward their goals and objectives, they may find that some elements will need to be refined in order to be more meaningful, or to respond to shifts in program resources and priorities.

Dashboard

The dashboard workbook (included among the attachments) was customized using Excel to assist TTCD in collecting data and reporting on progress toward the goals and objectives articulated in this evaluation. TTCD may choose to continue refining the workbook in ways that best meet their needs as it is used.

Revised Harvest and Sales Record Sheets

TTCD is advised to try the revised Harvest and Sales Record Sheets and accompanying recommendations about the process of recording the data documented in these sheets and evaluate whether the suggested changes are intuitive to staff. Individuals do not all think alike, and what seems to work in theory might encounter unforeseen difficulties in practice. These record sheets and the process of filling them out have already been adjusted because of the complexity in the number of people and sales outlets involved. As noted in the recommendations, when using an electronic, web-based Point of Sale service becomes cost-effective, the program will likely benefit from using it in terms of the ease and efficiency of tracking sales. However, with Tyonek's remote location, having a manual paper-based system as backup is also recommended.

Strategic Plan Poster Template

The poster version of Tyonek Grown's goals and objectives (included among the attachments) is likewise meant to be tailored and updated by Tyonek Grown staff as needed.

Sample Survey Questions

Sample survey questions (included among the attachments) for collecting data toward program goals and objectives have been selected based on the program priorities identified through the evaluation process. These questions are intended as a guide and should be tailored and updated by Tyonek Grown staff as needed.

Findings and Recommendations Summary

Program Evaluation

Show what the Tyonek Grown program has accomplished and whether it is meeting its goals.

Program Evaluation Findings

Tyonek Grown is meeting its program purpose to enhance food security by providing fresh organic vegetables to community members through sales and donations. Food security is defined as physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The program is also meeting its original goal to enhance food availability through Tyonek Garden.

Some Tyonek residents have their own gardens and greenhouses, but for the most part, the only fresh local produce community members eat is from the Tyonek Garden. Without the garden, many people would have few opportunities to acquire fresh vegetables. The garden has steadily increased food production and now distributes fresh produce to Elders (for home use and through donations to the Tyonek Elders' Lunch Program) and youth through Tebughna School. Community members can purchase fresh produce at a weekly market at the garden. If they are unable to go to the weekly market, residents can purchase produce at the Tribal Center from a newly-installed glass-door refrigerator. Interns and community volunteers (youth and adult) receive 'Veggie Bucks' to spend at the garden market in exchange for their help in the garden, so cash is not necessary to obtain produce. Tyonek Grown is now enrolled and working toward accepting SNAP benefits for Tyonek Grown produce, so community members who receive federal food assistance will also have access to fresh produce.

As the program has grown over time, Tyonek Grown's programmatic goals have expanded to serve as an example and provide education to other rural Alaskan communities. Tyonek Grown has successfully operated an annual multi-day hands-on community gardening workshop for three consecutive years (2015, 2016 and 2017), provided onsite garden planning and technical assistance to Nondalton, Prince of Wales Island and other communities, and held dozens of presentations and webinars to over 300 participants since 2012.

Program Evaluation Recommendations

- **Recommendation:** The Tyonek Grown program has accomplished much and is meeting its goals. Include metrics drawn from the support tools provided in this evaluation in TTCD's annual report to continue to document and communicate the program's progress and successes.
- **Recommendation:** Continue to explore new opportunities to introduce Tyonek residents to produce from the garden, including tasting events, free samples of new produce varieties at the Tyonek farmers market, recipe sheets, cooking demonstrations, etc.

Future Direction

Determine where to go in the future and whether program goal(s) need to be revised.

Future Direction Findings

Tyonek Grown has identified four target areas for the program's next phase of growth and development:

1. Provide technical and management assistance for the Tyonek Garden in accordance with NVT goals.
2. Build capacity within the Tyonek community to manage the Tyonek Garden for its long-term success and sustainability.
3. Increase the Tyonek Grown program's ability to sustain itself financially.
4. Support the rural Alaska food system by demonstrating and promoting sustainable agriculture practices using the Tyonek Garden and available outreach avenues.

Within each of these areas, strategies and measurable objectives have been identified to track progress toward each goal.

Future Direction Recommendations

The analysis includes a draft matrix of future goals, objectives and metrics. The evaluation attachments include a companion dashboard workbook as well as a poster version of the matrix.

- **Recommendation:** Tailor the Future Direction matrix of goals, objectives and metrics to specific targets and track progress. Print the poster version, and use it as an at-a-glance reminder of strategic direction for the garden in TTCD offices or at the garden. Use the dashboard workbook to help track progress toward targets and document trends for other outcomes.

Figure 4. Tyonek Grown Timeline

Program Highlights (First Five Years)	Where do We Go from Here?
Building the Garden: Tyonek Grown built most of the physical infrastructure (raised beds, hoop house/high tunnel, irrigation system, etc.) and obtained equipment (e.g., a walk-behind tractor).	**Building the Garden:** In the near term, complete the hydroponic project at the school. Construct a harvest and wash station. Possibly build a cold storage facility. Eventually utilize all the enclosed 1.5 acres.
Garden Administration and Management: TTCD helped NVT establish and expand the Tyonek Garden. TTCD started the Tyonek Grown program and the number of program staff expanded. Tyonek Grown increased grant funding for program activities and for physical infrastructure.	**Garden Administration and Management:** Migrate responsibilities for running the garden to NVT so that TTCD can focus on providing education and technical assistance to NVT and other communities interested in community gardening. Work toward financially self-sustaining the garden activities through earned income and non-grant donations.
Garden Production: Tyonek Grown increased produce from 400 pounds in 2012 to more than 2,000 pounds in 2016. Tyonek Grown identified crops that grow well in Tyonek.	**Garden Production:** In the near-term, stabilize production levels. Slowly expand each year so that in the long term, garden production increases. Focus on increasing variety of produce and growing reliable quantities of favorite crops.
Produce Sales, Donations and Distribution: Tyonek Grown increased donation and sales from produce.	**Produce Sales, Donations and Distribution:** Look for opportunities to sell more produce through fewer outlets (e.g., farm to cafeteria at school, Kenai Food Hub, wholesale to Arctic Harvest Deliveries), after meeting community produce needs/demand in Tyonek. Increase the efficiency of sales procedures.
Outreach and education (Tyonek): Tyonek Grown established an educational partnership with Tebughna School, developed and maintained an internship program.	**Outreach and education (Tyonek):** Expand Tebughna School partnership. Explore partnerships to offer community classes/workshops in nutrition and food preservation/storage techniques for garden produce.
Outreach and education (Other Communities): Tyonek Grown hosted an annual hands-on community gardening workshop for three consecutive years.	**Outreach and education (Other Communities):** Continue outreach to other TCDs and rural communities in some capacity, focusing on partnerships and technical assistance (expect to continue to rely on grant funding to support these).

Metrics and Data Collection

Establish metrics and processes for data collection to better track and measure program performance.

Metrics and Data Collection Findings

Data about crops, harvest, sales and distribution are currently being collected. Crop and harvest data are tracked well, although sales and distribution data have been tracked inconsistently. Data about the impacts of the Tyonek Garden on the community, including general community health and youth development outcomes are not yet being consistently tracked. Community gardens often track these outcomes among their communities using surveys in which respondents rate their levels of well-being and answer open-response questions about the positive impacts of the garden in their lives. TTCD has included questions about the garden in a survey administered in 2016, but those questions did not specifically focus on desired outcomes.

Metrics and Data Collection Recommendations

In the Metrics and Data Collection Processes analysis, the program evaluation ties each of Tyonek Grown's four identified goals to a set of measurable objectives with target dates and metrics to track progress; specific dates and metrics can be filled in or refined by TTCD and Tyonek Grown staff. All objectives and associated metrics have also been incorporated into a dashboard workbook that TTCD can use to update and compare annually. The dashboard template for key indicators is included among the attachments.

Recommended Improvements to Existing Tyonek Grown Harvest and Sales Record Sheets

The analysis of data collection using the Harvest and Sales Record Sheets currently used by TTCD and Tyonek Grown staff suggests that some changes to the sheets could help improve the efficiency and consistency of data collection. Program staff will have to experiment with these changes to determine whether they truly improve the system. In the long term, an electronic, web-based point-of-sale (POS) system will probably be the easiest and most efficient option.

In the short term, TTCD could include the primary distribution destination (Elders' Lunch, Market, School, TC Refrigerator, Food Hub or other) as a category on the Harvest Record Sheet, since it is being used that way to some extent already. With the Harvest Record Sheet documenting the primary distribution of each crop, the Sales Record Sheet can be used to record the summary level inventory and prices for each primary distribution market. The Sales Record Sheets columns could be adjusted as follows:

Sales Outlet: (Tyonek Market, Tribal Center Refrigerator, School, Food Hub, other)

	Inventory at start of sale			Inventory sold			Inventory lost to spoilage, discounts, samples offered, etc.			Inventory left over		Secondary distribution (destination of leftovers)	
Crop	units	price	value	units	price	value	units	explanation	value	units	value	units	destination
potato	4 lbs	$2/lb	$8	3 lbs	$2/lb	$6	0.5 lbs	free sample	($1)	0.5 lbs	$1	0.5 lbs	Anchorage market

Each of these columns would then be filled out at a specific timing relative to the market or delivery of each sales period (for the Tribal Center Refrigerator or orders such as the Food Hub or School farm-to-cafeteria program).

At the beginning of the market (for Tyonek Market, Anchorage markets, etc.) or sales period (for Tribal Center Refrigerator, Food Hub sales, School sales, etc.), Tyonek Grown staff fill out the first four columns. For each crop, record the inventory at start of sale. The units of each crop should match the harvest sheet.

Sales Outlet: Tyonek Market *(beginning of market)*

	Inventory at start of sale			Inventory sold			Inventory lost to spoilage,			Inventory left over		Secondary distribution	
Crop	units	price	value	units	price	value	units	explanation	value	units	value	units	destination
potato	4 lbs	$2/lb	$8										

During the market (for Tyonek Market, Anchorage markets, etc.) or sales period (for Tribal Center Refrigerator, Food Hub sales, School sales, etc.), Tyonek Grown staff may choose to give free samples, promotional discounts or discover that some produce has been damaged since the harvest. These are recorded in the 'Inventory lost' columns.

Sales Outlet: Tyonek Market *(during market)*

	Inventory at start of sale			Inventory sold			Inventory lost to spoilage, discounts, samples offered, etc.			Inventory left over		Secondary distribution (destination of leftovers)	
Crop	units	price	value	units	price	value	units	explanation	value	units	value	units	destination
potato	4 lbs	$2/lb	$8				0.5 lbs	free sample	($1)				

At the end of the market (for Tyonek Market, Anchorage markets, etc.) or sales period (for Tribal Center Refrigerator, Food Hub sales, School sales, etc.), Tyonek Grown staff fill out the remaining columns.

Sales Outlet: Tyonek Market *(end of market)*

	Inventory at start of sale			Inventory sold			Inventory lost to spoilage, discounts, samples offered, etc.			Inventory left over		Secondary distribution (destination of leftovers)	
Crop	units	price	value	units	price	value	units	explanation	value	units	value	units	destination
potato	4 lbs	$2/lb	$8	3 lbs	$2/lb	$6	0.5 lbs	free sample	($1)	0.5 lbs	$1	0.5 lbs	Anchorage market

For each crop, count the remaining inventory at the end of the market. Add this number (of units) to the units of any inventory lost during the market, and subtract that number of units from the inventory at the start of the market. This number should be checked against itemized receipts, and will be easier with POS system. The decisions of where to send the leftovers can be recorded in the 'secondary distribution' column. Tyonek Grown staff may prefer to keep the existing formatting for the secondary distribution column.

For non-market, single source sales outlets (Kenai Food Hub, sales to schools, etc.), Tyonek Grown staff would fill out the form just before delivery of the produce, and write '0' or 'not applicable' in columns that are not applicable.

Sales Outlet: Food Hub

Crop	Inventory at start of sale			Inventory sold			Inventory lost to spoilage, discounts, samples offered, etc.			Inventory left over		Secondary distribution (destination of leftovers)	
	units	price	value	units	price	value	units	explanation	value	units	value	units	destination
potato	4 lbs	$2/lb	$8	4 lbs	$2/lb	$8	0 lbs	n/a	$0	0 lbs	$0	$0	n/a

- **Recommendation:** In the short term, try the suggested changes to the Harvest and Sales Record Sheets and recording process. In the long term, when an option becomes cost-feasible, invest in a web-based Point of Sale (POS) system to electronically track sales and distribution of produce.

Recommendations for Collecting Data Using Surveys

Data about community perceptions and the impacts of the Tyonek Garden on the community, including general community health and youth development outcomes can be tracked using surveys for a) teachers/students, b) interns, and c) community residents in general.

Teacher/Student Surveys. Students could be asked to complete a survey or writing assignment that would focus on youth development outcomes and participation in the Tyonek Garden. Student survey questions could ask how often students volunteer at the garden, how often they eat produce from the garden, how the garden program has benefited them, what they have learned from it, and whether it affects their attitudes and achievement in other areas of life. Similar youth surveys done by other community gardens typically include questions about whether the students have learned any new knowledge or skills because of the garden, whether they have improved their communication and leadership abilities because of the garden, and whether/how the garden has had any effect on their social life and sense of belonging in the community.

School teachers could also fill out a questionnaire describing how specifically and how much/often they use the garden as a teaching tool for students. Teachers could also potentially give qualitative evaluations of student learning and engagement tied to their educational experiences with the garden. TTCD could work with the school to identify ways to track actual educational outcomes (e.g., grades, attendance, student engagement) among students. Some of the aggregated performance data are publicly available, so TTCD could observe whether there are improvements in the years since the garden started, especially among participating students. Although it might be difficult to demonstrate that the garden directly affected any of these educational indicators, such measures can still indicate some level of positive change in the community.

Intern Surveys. Intern survey questions could be much the same as the teacher/student surveys, focused more specifically on the intern program. They could also ask questions targeted at understanding the level of interest for additional internships or improvements to the internship program. A questionnaire could be given to interns during and a period of time (e.g., six months to one year) after their internship about what they learned from it, how it has shaped their attitudes and perspectives, etc. The interns' supervisor could also comment on the development outcomes (s)he observed in the interns, related to participating in the garden program.

Community Surveys. Community survey questions could target health outcomes and participation in the Tyonek Garden. These questions could include topics such as how often respondents volunteer at the garden, how often they eat produce from the garden, whether they have any health conditions related to food and lifestyle, and their general level of physical and mental/emotional wellbeing. Respondents could also be asked

questions about physical health outcomes (e.g., weight changes, incidence of illness) and to describe any positive impacts the garden has had on their lives or the community in general. Survey questions could also document community preferences such as how individuals like to cook the produce they get from the Tyonek Garden, or include a tasting attitude survey. For example, Tyonek Grown could set up a 'Yum and Yuck' taste test (suggested activity in the Farming Concrete Data Collection Toolkit) that allows youth and the young-at-heart to evaluate whether or not they enjoy fresh produce varieties from the garden before and after harvesting – and tasting – the produce.

Survey Administration. TTCD could develop and administer their own surveys, but if other potential program partners are already giving regular surveys, it would likely be easier and more effective to work with those partners to include Tyonek Grown questions on existing surveys. For example, the Alaska Department of Fish and Game (ADF&G) conducts a subsistence survey every year. Starting in 2016, a question about the Tyonek Garden was included in the survey given to Tyonek residents. This survey could continue to be used to track how many community members eat vegetables from the Tyonek Garden.

The Tribal Health Department has conducted an annual survey in the past that included questions about chronic diseases and other health ailments, questions that target health outcomes associated with increased vegetable consumption. This health survey could be an opportunity for TTCD to partner with the Tribal Health Department to collect additional data to identify and possibly measure health impacts of the garden, if the Health Department is willing to replicate these efforts. Alternatively, TTCD staff could attend local health fairs, which occur every six months to a year, and administer a survey of community members. TTCD might need to offer an incentive to encourage people to fill out the surveys, such as Tyonek Grown Veggie Bucks to purchase produce at the market, or a coupon for the market.

- **Recommendation:** Use surveys to measure and evaluate garden impacts on community health, lifestyle habits, and youth development outcomes. To the extent possible, work with partners to incorporate questions about the garden into existing surveys. Sample survey questions for each of these three categories have been included among the attachments.

Other Data Collection Recommendations

- **Recommendation:** Explore the use of community garden data collection apps and similar tools that continue to be developed and improved, such as those by **Farming Concrete,** which include a data collection toolkit and app for food production data, environmental data, social data, health data, and economic data, tailored to community gardens and urban farms. https://farmingconcrete.org/barn/
- **Recommendation:** Work with members of the Alaska Food Policy Council, the Alaska Food Coalition and/or the State of Alaska Department of Health and Social Services Division of Public Assistance (which issues Food Stamps/SNAP benefits through the Alaska Quest Card) to recommend improvements to the SNAP program Mobile Market app to increase its data collection functionality and flexibility of use in Alaska markets. Currently the Mobile Market App works with a card reader to process transactions via a USDA-contracted company. The app allows sales to be recorded for multiple markets, though it has a primary default market. Receipts are generated, but they are not itemized receipts. There is no way to track inventory sold or price per crop using the app. The company charges an initial 1.79% fee that may increase. Increasing the functionality of the Mobile Market App to more closely resemble an electronic, web-based POS system, such as Square, would help increase the efficiency of tracking data important to market organizers, farmers and

SNAP program officers. Square charges 2.75% and offers discounts to non-profits only if they generate $250,000 or more per year in transactions, although it does allow non-profits to collect donations using the system. Alaska Seeds of Change, a non-profit urban farm focused on youth-development in Anchorage, uses Square; one of their market salespeople reported that Square works very well for that program, as well as another farm where she previously worked.[4] The sort of information captured by itemized receipts helps farmers and market organizers better understand purchasing patterns and preferences to run more efficient and effective farm and market operations. This same information would also help ensure that produced purchased through the assistance program meets their criteria for allowable purchases. Itemized receipts have the most relevant information but can be cumbersome to write out and input into the system manually.

[4] Personal communication 10/14/2017. http://akseedsofchange.com/

Attachments

Attachment A. Site Visit Report, Meeting and Interview Notes

Attachment B. Financial Sustainability Supplement

Attachment C. Literature Reviewed

Attachment D. Sample Survey Questions

Attachment E. Strategic Plan Poster Template

Attachment F. Sample Revised Harvest and Sales Record Sheets

Attachment G. Dashboard Workbook

Attachment A. Site Visit Report, Meeting and Interview Notes

Meeting Summary: Project Startup

April 19, 2017

Heather Stewart (Agnew::Beck) and Christy Cincotta (Tyonek Tribal Conservation District) reviewed the project scope of work, deliverables, and purpose of the program evaluation, as well as background information for the evaluation.

About the Program Evaluation

- TTCD wants to get a sense of whether they are meeting the goals they set out to meet. Have the goals changed? Are there better ways to track and measure?
    - Right now, they have plenty of photos and descriptive information, track pounds of produce each year, how it's distributed, and financials.
    - TTCD wants to establish measures for whether the program is really making a difference in 1) community health, 2) youth education and development.
    - TTCD also wants measures to help them think about the long-term financial viability of the program. So far, it has been heavily grant funded. Initial costs were high because they had to build infrastructure (e.g., greenhouse, irrigation system). They would like to find ways to make the program self-sustaining.
    - Tyonek Grown Program revenue sources include: selling some produce, workshops to other communities around the state who are interested in similar programs (hosted in Tyonek and sometimes in Palmer), grants. Workshops provide a small amount of income, and might be tracked and evaluated better.
        - Grants: USDA NEFA Beginning Farmers Grant (main grant currently), USDA Agricultural Marketing Service, Office of Advocacy and Outreach
- The program has grown quickly in a short amount of time.
    - 2012: First growing year. Community cleared the area and built raised beds. They do starts in school. Kids planted the starts in the garden and tended them over the summer. The first year, food was shared within the community only. Produce was low.
    - 2013: Built hoophouses, irrigation system (before they were hauling buckets from the lake), installed solar power to run the fans in the hoophouses. Because they put more time into building infrastructure, less was devoted to growing the veggies. Produce was still low and shared in the community.
    - 2014: The infrastructure paid off. They produced more food, hired youth interns locally. Interns live in Tyonek at least in the summer if not year-round. They are age 14 or older and work three days per week. There are up to 4 interns during a season.
    - 2015: First year of offering the workshop. They brought people from other communities to Tyonek for the workshop, and installed a drip irrigation system, which makes watering much easier.
    - 2016: Workshop offered in Tyonek and in Palmer. They hired a local person to supervise the interns. (Before that, Nicole flew out to Tyonek three times per week.). Produce yields went

up to 2,000 pounds and the produce that was sold (not distributed internally to the community) generated $3,000 in sales.
    - 2017: current year
    - 2018: will have a hydroponic system at the school
- Distribution is tricky and time-consuming. They give as much to the Elders' program as they will take.
- Nicole and Tonya started in 2014. Nicole has a strong agricultural background, teaching about soil management and composting. They did plant starts at the school last week. When the plant starts are planted in the soil, they do a blessing ceremony. Kids come out in the fall to harvest. They have a harvest party in the fall. Kids get really into it.
- Team goes over the planting plan each year, talk with Council, people show up in the garden, kids have the most significant involvement.
- People to interview:
    - TTCD and program partners (probably at next meeting can have this discussion):
        - Erin Hoffman – financial services, grant writing, program planning, bookkeeper, wrote their (unfinished) business plan with Christy and Nicole
        - Gwen Chickalusion – Board of Directors, has gotten really into the program, added questions about the program to an ADF&G subsistence survey, serves as Garden Supervisor seasonally
    - School/educational component: teachers, students
        - interest in farm to cafeteria at the school, have gone through food safety assessment protocols. School starts in August (prime harvest time). Harvest lasts through October. Could grow root veggies in bulk for the school;
        - interest in how program has benefited students, what they have learned from it, whether it affects their attitudes and achievement in other areas of life;
        - have some garden-based curricula measuring pumpkins and making pumpkin muffins – interest in whether teachers use garden/program in their teaching curricula or are interested in incorporating it more into their curricula;
        - high turnover among school principals in recent years might affect formal programming with school; part of Kenai Peninsula School District.
    - Elder component: elders, Elder Lunch Program Coordinator
        - How program has benefited community, elders
        - estimate the $ value of contributions to the elder lunch program, can help demonstrate value of program for grant applications or other revenue streams
- Produce Sales: They have multiple sales every week, which is cumbersome in summer. Producing in bulk for school or other larger buyer would be easier and preferable for them.
    - Last year, had market sales in the CIRI building. This year will have market sales at Southcentral Foundation on Thursdays.
    - Weekend markets are difficult because they are on weekends.
    - In Tyonek, they have a weekly farmers' market and sell produce at the Tribal Center (just installed a glass-door fridge there; people at the Tribal Center help with sales).
    - They are willing to sell some produce in Anchorage to help make it cost effective but want to keep as much produce in Tyonek as possible.
    - A little produce is sold in Beluga (neighboring community)

- Right now they are using half the garden space now. Have done all the planned infrastructure. They also have a walk-behind tractor. They want to do less running-around in summer and make a difference in the community.
- The Tribe owns the program. The Corporation leases the land the Tribe. TTCD manages the program. School involvement is critical; the program wouldn't run without the school involvement.
- TTCD will send pre- and post- evaluation materials, business plan (in progress), grant reporting documents for us to review.

Meeting Summary: Project Team Worksession

May 8, 2017

Christi Cincotta, Tonya Kaloa, Nicole Swenson, and Erin Hoffman (TTCD), Heather Stewart and Aaron Mondada (Agnew::Beck) discussed the Tyonek Grown program's current organization, programming, and partnerships; its history and future goals, objectives and possible metrics for measuring progress toward program goals.

Program organization

- **Action Item**: Agnew::Beck will update program and staff organization charts.

Programming and partners

- The Tebughna School is one of Tyonek Grown's largest partners.

Program overview and history

- The Garden was started before TTCD was involved. The community asked TTCD to be involved and is community-driven. We would eventually like to provide support but be relatively hands off with the garden.

Goals

- There is a desire to incorporate a cost-effective way of tracking sales and inventory. Currently, the tracking is inefficient and only tracks pounds sold and total sales.
    - Point of sales systems are not cost-effective and the current level of sales doesn't justify this type of investment.
    - Are sales even worthwhile? Would it be better to just donate all the produce?
- Statewide trainings in other communities are beyond the current mission and capacity of the organization. Sales of produce don't come close to supporting that type of training. This program was grant-funded and will likely not continue without additional grant funding.
- For long-term sustainability, the garden will need to produce more, and become self-sustaining with community management.
    - We are currently working half of the available land. Each year we use a little more of the garden, but this must be done slowly so that our work load doesn't exceed our capacity.
- We want to reduce the involvement of the TTCD:
    - Make sales more efficient and spend less time on sales.
    - Supervise the garden on a less-frequent basis.

- Keep more food within the Tyonek Community:
  - Donate to schools and elder program
  - Stock the community fridge
- Set up the sales to accept SNAP benefit cards (underway)
- Source direct sales to help eliminate some red tape and transactions.

- Increase nutrition education by forming meaningful partnerships.

Outreach

- School ends May 24th, schedule interviews before people leave for the summer. Potential interviewee list includes:
  - Tebughna School, Teachers, Principal, staff
  - Elder program manager
  - Gwen Chickalusion – Garden Supervisor
  - Tyonek Grown interns (two started in early summer; two more are scheduled to start later in the summer).
  - Garden Committee

Challenges

- Delivering food directly to elders can be stressful and ineffective, as many don't know how to prepare the food.
- It is difficult to track where everything goes. TTCD is tracking donation and sales, but not perfectly.
- We are only using half of the land, but we need to build sustainability within the community.
- Long term food storage: Is cold storage a possibility?
- Point of sales systems are too expensive.
- We grow many different types of crops, which makes it difficult distributing to vendors who want specific quantities on a regular basis.

Relationship with Tebughna school.

- Students plant almost all of the starts, water and maintain the garden, collect the produce, transplant the seedlings, and help harvest. They have lots of pride and ownership in the garden.
- There is a desire for nutrition education. Small partnerships, not large-scale nutrition.
  - There have been a few cooking demonstrations.
  - Partnership with public health and at workshops.
- School snacks and lunch programs

Evaluation metrics

- Produce grown
- Produce sales
- Community visits
- Technical assistance projects?
- Workshop attendance and outcomes?

- Community education, particularly impact on interns and youth as a metric? I.e. number of students reached, interns employed, volunteers at the garden each year?
    - More metrics for the interns/students and measuring the impact short and long term

Tyonek Grown Key Informant Interview/Discussion Question-Notes

Garden Committee

- What is your general sense of the program's success?
- What is the value you believe the program brings to the community?
- What has worked? What has been challenging?
- How do you see the program evolving in future? Garden growth and future expansion?
- Discuss how the Tyonek Grown program might transition some of the management and operation of the garden to the NVT.
- How can this evaluation be helpful to you?

Erin Hoffman, Nicole Swenson, Tonya Kaloa

- How are data currently collected and recorded?
- Which data are currently collected and recorded? Are hard copy or digital records available for us to review? How far back do the records go?
- What does it mean to collect data in a more efficient way for the people involved in data collection? Discuss the specifics of what is not working and what program staff want to be able to do.
- Review goals and objectives to see if anything important is missing, or if something does not make sense to program staff.
- Discuss the technical assistance and training activities that have taken place. Are these increasing? What is the level of demand? How many attendees did the last training have?
- How do you envision the program as financially self-sustaining?
- What percentage of funding comes from individual donations?

Gwen Chickalusion

- What do day-to-day operations look like?
- How are food production, distribution and sales data currently collected and recorded? Review any physical documents that are available.
- How have Tyonek residents been involved in the program this season? Has anything changed this year?
- Do you know about any upcoming challenges for the garden or program in general?
- Are there any updates on how the season has gone since we last spoke?
- Do you want to be collecting data in a more efficient way? What does this mean to you?

Garden interns

- How did you get involved with the program? How do you see other people getting involved?
- How has the garden changed your perception of gardening and sustainability?
- What do you believe is the garden's biggest success in the past two years?
- What have you learned in the garden? Have you learned anything in the garden that you use in school?
- Is there anything else that could be done to help you learn at the garden?

Elder Lunch Program

- How many people participate in the Elder Lunch program?

- What has been the overall impact of the garden on elders in the community? Are there any ways in which you are tracking or could track the overall impact of elder health and wellbeing?
- Do you use the garden donations as an in-kind donation or match on grant applications, etc.? If not, is that something you would be interested in? Has anyone estimated the value ($/lb) of the donations?
- Do you believe the meal program has become healthier since the partnership with Tyonek Grown?
- What is your capacity to take in additional food from the garden? Do you want or need more? Less?
- Are there any other ways that elders could benefit from the garden? For example, community participation and interaction with youth?

Tebughna School

- What is the participation rate in the school snack program?
- How much more food from the garden could the school realistically integrate into the snack or lunch programs? Are there certain vegetables the school could serve more of? Are there any vegetables the school has too much of?
- How do you perceive the value of the garden on the educational development of youth in Tyonek? Are there any ways to track the impact of the garden on student development and educational benchmarks, such as attendance rates, grades, student participation in voluntary programs? Could a periodic survey be given to students?
- Does the school pay Tyonek Grown for vegetables in the school snack or farm-to-cafeteria program or is the produce considered a donation to the school?
- Are there any other opportunities to partner with the school to increase nutrition education or education about food systems?
- What else does the school need to thrive in the community?

Clinic

- Is there a way for the Tyonek Grown program to partner with the clinic and track physical health outcomes such as weight or incidence of illness and disease relative to consuming produce from the Tyonek garden?
- What do you know about the eating habits of Tyonek residents?
- Does the clinic offer any sort of nutrition education right now?
- Does the clinic track any data related to the garden, such as number of community members who eat food from the garden or who get exercise from working in the garden?
- Does the clinic track any data related to general levels of activity/exercise in the community?

NVT Council

- What is the general perception of the impact of the garden on the community?
- What else is needed for community nutrition, education and health goals to be reached?
- Are there any major gaps that Tyonek Grown may be able to help fill within the community?
- What role do you see the garden playing in the community within the next five years?
- What role do you see the NVT Council playing in running the garden within the next five years?

Interview with Garden Supervisor, Gwen Chickalusion

June 21, 2017

What is your position within the community?

- Tyonek Grown Garden Supervisor, Second year.

How is the garden doing this season?

- Slower than it has been in the past couple of years. Mostly it's just cold. Last year at this time we were harvesting. We started with a normal planting season. Planting season starts in April with the spring break; most of the plants are in by then.

How did you get involved with the program? How do you see other people getting involved?

- TTCD had some work opportunities with community meetings. I started telling them what I wanted to see. That year we started planting tomato seeds at our community tribal building. I was a community garden volunteer, got Volunteer of the Year.

How do you see the garden doing over time? What is your vision?

- Steadily growing, so the numbers of pounds of produce increases each year. We learn more every year, lots of plant-specific information. We have been pollinating the flowers and by hand.

Are there any challenges you are facing currently that you have not faced in years past?

- Not that I can think of; we use trial and error. Last year the water pump broke, and we just improvised. We are out in the middle of nowhere. If something breaks, we have to come up with a solution. Interns are not involved much in the infrastructure maintenance. Older interns are learning how to use the tiller.

What types of data do you collect from the garden? How is it tracked? What are you willing to track/what do you think would be helpful to track in the long term? What are you willing and able to track in the future?

- For the garden layout, we have outdoor raised beds and plant bed high tunnels. We track which bed produces what, so we might have three different types of lettuce in one bed. The garden layout is mapped out. Nicole would be willing to share the garden layout.
- We track pounds of produce yielded by item. [Gwen keeps track of the data sheets and sends the filled-out sheets to Anchorage, where TTCD staff enter the data into a computer.] Produce is weighed every time it is harvested. We track how much produce goes to the market. We send some to Tebughna [School].
- We also track volunteer hours. Volunteers get a gift certificate to go to the market based on the number of hours they worked.
- We track what we add to the soil, how many gallons of fertilizer we make, how much and when we put it on the garden, along with soil tests.

What type of support or services do you need to improve the performance and capacity of the garden?

- We are at the point where we could grow the program. If we could get a second water tower near the back, that would help the expansion. Additional staff would be necessary (part-time for now).
- We have a five-year plan.
- We have a partnership with the school [that involves] starting and planting the seeds, watering, and maintenance.

- If someone misses the market, then they have access in the community center fridge.
- Elders get a big portion of what we grow. Usually the first few harvests go to the elders, so they get fresh grown salad in the community center. The [Tyonek] Native Corporation allows us to store items there.
- It's challenging to get people to come and volunteer. TTCD is really the support that keeps it growing. The community listens to us and helps us do what we want to do.

Are there any partnerships or programs we should know about that are either currently in the works or being discussed?

- No answer.

What do you feel is the garden's biggest success in the past two years?

- Growing our youth. These youth are the next generation of gardeners, and TTCD will not be here forever. We like that they are building capacity.

Since the start of the garden, do you feel like the program has been successful? Why or why not?

- No answer.

What do you perceive as the value Tyonek Grown gardens adds to the community?

- No answer.

Is there anything else you would like to add about life in Tyonek, the garden, or increasing access to healthy affordable foods in the community?

- We learned what we can use for compost. We use this for everything, so this was an important learning process.
- Some people eat a healthy diet, but some can't because their limited income puts a strain on healthy living. The Garden helps alleviate the strain on limited income because we can get a gift certificate.
- It's so much better for the kids to watch something grow. It's linking kids to their food system. It's been ***so*** good to teach the kids about the process!

Have you noticed any difference in the kids since the garden started?

- Hard to say since I'm not with the school anymore.
- Sometimes kids want to participate; some don't have much interest.
- The garden helps build the foundation.

Tyonek Grown Site Visit Report

August 9, 2017

On August 9, 2017, Agnew Beck (Heather Stewart and Aaron Mondada) visited Tyonek to observe the garden, Tyonek-Grown program activities, and to meet with key representatives from the community. During our short visit to the Native Village of Tyonek, we accomplished the following:

- **Garden tour**
- **Interview with Gwen Chickalusion**
- **Interview with the Tyonek Grown interns**
- **Interview with Chris from the Elder's Lunch Program**
- **Interview with Tebughna School teachers**
- **Participation in afternoon market sales**

Tour the garden facilities

Touring the Tyonek Grown Garden was the major impetus for our site visit. To make suggestions and recommendations for how to improve productivity, community interface, revenue and data tracking, it was important for us to get a hands-on feel for the physical garden space, the harvesting process, the preparation for market, and sales and distribution. The garden itself sits on a two-acre plot of land that has been cleared and cultivated. Two large high tunnel green houses, a solar-powered water pump and a large two-panel solar collection system sit near the entrance of the garden. The garden itself features fifteen raised beds outside of the high tunnels, long rows of various vegetables, and ground cover crops to help regenerate the soil.

While we were on site, one of the Tyonek Grown interns gave us a complete tour of the garden. The garden was in the middle of the growing season and was producing beautiful harvests of kale, potatoes, tomatoes, kohlrabi, beets, lettuce, squash, and numerous other herbs, flowers and vegetables. Some unique features of the garden include: the use of rotating cover crops to maintain soil health, above-ground compost piles, and undeveloped areas that are prime for expansion. The garden is staffed by Gwen Chickalusion and three interns at least three days a week. Nicole Swenson and Tonya Kaloa from TTCD go to the garden once a week to help with harvests and larger projects. Garden harvesting occurs once a week, and produce is sold that same day at the market. On days when Nicole is not at the garden, she supervises the overall garden management activities. The garden harvests increase in frequency if there is a need from the Elder's Lunch Program.

Interview with Gwen Chickalusion

While on site at the garden, we spoke with garden supervisor Gwen Chickalusion. Gwen provided us with an overview of the garden's history and timeline and described the day-to-day operations, challenges and innovations of the garden. Major highlights from our conversation with Gwen included:

- An overview of the Alaska Food Hub sales program in which the Tyonek Garden is now participating.
- A description of preservation and food storage in the community, which is currently very limited. Gwen knows of one person who cans food for the winter, another will freeze food, but this is mostly meat from the hunting and fishing season.
- Gwen described using slightly less beautiful crops as samples at the market to help generate sales. For example, there was not much interest in the kohlrabi that the garden was producing until Gwen put out a sample bowl. Kohlrabi now regularly sells out from the market stand.
- Sales and harvest sheets are used to help track and manage the daily production and growth of the garden. Gwen likes using the harvest sheets because they provide spaces for notes and are easy to use. These sheets have helped them keep track of the garden's growth and production month-by-month and year-by-year. The sales sheets could use some improvements, but they are not sure how to improve these.
- Gwen feels that the garden provides a positive influence on youth in the community, and she loves teaching the kids.
- The garden is currently weighing everything by hand on small single-item scales. The garden would benefit greatly from a larger digital scale that could weigh whole batches of a crop.

- The garden maintains and uses a food price list that is based on an economic analysis of what consumers are willing to pay for certain types of produce.

Major Garden Improvements Timeline

- 2012 – Fencing installed
- 2013 – High tunnels constructed with funding from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)
- 2013 – Solar panel installed for pump system
- 2013/2014 – Irrigation system installed, with a gravity fed pump
- 2015 – Drip irrigation system installed
- 2015 – Updates to the power shed completed
- 2015 – Second tank added to irrigation system
- 2015 – New sections of garden production added
- 2017 – New sections of garden production added

Interview with Tyonek Grown Interns

There were two Tyonek grown interns and one volunteer working at the garden while we were visiting. In our conversations with the interns we found that the experience had helped instill a sense of accomplishment and a love of gardening. One intern commented that the garden was helping the whole community with the market and the Elders' Lunch Program. The interns have witnessed the growth of the garden; they noted that it has gotten a lot bigger and that they believe people are eating healthier because of the fresh food available. Two of the teachers at the Tebughna School integrate the garden into their lessons and help teach the kids about nutrition, the environment and the economics of food. The garden has influenced one intern's perceptions about healthy eating and future aspirations. Another intern commented that she was surprised how good everything from the garden tastes, and that before the internship she did not really eat many of the vegetables grown in the garden.

The garden is currently funded to support up to four interns annually; currently there are only three interns. Gwen noted during this conversation that having more assistance with the garden would be helpful. Often, one intern's younger siblings and cousins come to learn and help with the garden during the summer. Many of the interns return year after year. One of the interns had been working with TTCD for the past four years, and her sister was there volunteering and helping with the harvesting. The primary way TTCD recruits the interns is from school participation in harvests and planting.

Interview with Chris from the Elder Lunch program

Chris makes a daily lunch for tribal elders in Tyonek. We spoke with Chris in the kitchen of the tribal center. From our conversation, it is clear that the garden helps stretch the resources of the kitchen and has introduced a broader variety of meals and vegetables into the Tyonek Elders' lunches. Chris commented that the garden helps the kitchen reduce the use of stored canned goods and helps push their budget further. Chris finds a use for everything the garden gives him and can request additional items from Gwen as needed. Chris noted that people in the village are not used to eating as many fresh vegetables; however, people are always willing to try what he makes. We also learned that the Elders' lunch may be the only meal some elders eat throughout the day. These older tribal members might not be able to stockpile meat from fishing and hunting, and because the nearest grocery store is an airplane-ride away, they often cannot acquire store-bought food on demand. The relatively high cost of food shipped into the village from outside compounds the difficulty for those with limited cash or even food stamps. This finding highlights the significant importance of the Tyonek garden in directly providing food security in the village. A commercial glass-door refrigerator was installed in the Tribal Community center in 2015, where Chris's kitchen is located, to store produce from the garden that can be purchased by anyone in the community. The refrigerator also allows Chris to immediately access an additional supply of produce for the lunch program if needed.

Tyonek Market Stand

The Tyonek Grown market stand popped up around 1:00pm and was set to run until 3:00pm. The stand is open every Wednesday during the harvest season and offers a variety of in-season crops from the garden, picked only a few feet away from the garden stand. The produce is individually priced; when an item is purchased it is recorded, handwritten receipts are made, and a ledger of sales is updated. The sales recording process (and record sheet) was noted as an area of desired improvement for the Tyonek Grown program. While we were there, we saw a few transactions take place and noted the benefits of having the market stand at the garden. One customer asked if any lettuce was ready for sale. It was not at the market stand, so Gwen led him into the garden and harvested fresh lettuce for him on the spot. The market is truly a community asset, as seen in the smiling faces and the enthusiastic Facebook posts commenting about whatever in-season crop is for sale that Wednesday.

Interview with Tebughna School Teachers

The afternoon market drew two teachers from the Tebughna School. While they were browsing fresh produce for sale, we discussed with them the garden's impact on the Tebughna School and their students. James Perzechino, who teaches grades 5-12 at the school, indicated that the Tyonek Grown program has had an immense impact on the kids. According to James, the garden provides healthier foods, job opportunities, and brings guest educators from the garden to improve the learning environment around natural and environmental sciences. The garden provides hands-on learning experiences and helps demonstrate the benefits of community building to Tyonek youth. James also mentioned that he has incorporated the garden into his non-science lessons, where he uses hands-on examples to teach math and economics by looking at the impacts of shipping food to the village *versus* eating local.

We also talked with Christy Gomez-Stephan the K-4th grade teacher at Tebughna School. Christy agreed that the garden was meaningful to the students' educational experiences and indicated that she has seen the garden give kids more confidence in and out of the classroom. She also suggested that the garden could help reduce absences from school in cases where families would otherwise need to leave Tyonek for Anchorage to purchase food.

Key Themes and Finding

- The Anchorage Food Hub is a new point of crop sales for the Tyonek Grown Program and could help yield additional revenue for the program. The garden needs to generate $15,000 to $20,000 to sustain its current program model. The food hub allows producers to sign up for $40 annually and customers to join for $20 annually with the goal of increasing access to local foods and creating easier distribution to restaurants and individuals.
- Revenue for the garden has remained relatively stable over the period of 2015 to 2016.
- Some Tyonek residents have their own gardens and greenhouses, but for the most part, the only fresh local produce they are eating is from the Tyonek Grown garden.
- Without the garden, many people would have few opportunities to acquire fresh vegetables.
- The Tribal Health Department conducted an annual survey a few years ago that looked at rates of chronic diseases and other health ailments. The survey could be an opportunity to partner with TTCD to collect additional data to identify and possibly measure health impacts of the garden if the Health Department is willing to replicate these efforts.
- TTCD and garden staff stated a goal of producing enough revenue at the garden to support the staff and intern programs. Two strategies were discussed to help realize this goal:
    - Provide additional food safety training to garden staff and interns, and set up a larger sterile surface for preparing produce for sales and distribution. This would ensure that the Tyonek Garden produce meets the food safety standards of a wider number of retail outlets.
    - Grow high net-value crops that satisfy produce requests from within and outside the Native Village of Tyonek and increase the net revenue per 100-square feet of cultivation.

Meeting Summary: Project Team Worksession

October 9, 2017

Christi Cincotta, Tonya Kaloa, Nicole Swenson, and Erin Hoffman (TTCD), Heather Stewart and Aaron Mondada (Agnew::Beck) reviewed key highlights of the draft evaluation. The group confirmed program goals, objectives, strategies and metrics for measuring progress toward program goals, as well as discussing challenges and potential improvements to the program's existing data collection.

Goal 1:

- The school now pays for produce. Before, the Tebughna Foundation paid for the produce that was donated to the school snack program. The school snack program and farm-to-cafeteria are the same program, but they have two budgets: the snack budget and cafeteria budget. The program is subjective to the staff. Sometimes the food is donated to the camp, etc.
- Can the produce sold/donated to the school be tracked in the accounting system? It has improved with the sales sheet.
- Currently TTCD tracks financial donations, but not the value of the donations to the school.
- Produce sales at tribal center and market:
    - Percentage of community eating garden vegetables or total percent of community eating vegetables?
    - This indicator could be included in a survey given at the health fairs, which would give Tyonek Grown staff more to do at the health fairs. Currently, staff have a booth or pamphlet at the

community health fairs, which are held once or twice a year at the school or the tribal center. The survey could be used to get an average of healthy food consumption.

Goal 2:

- Is there a focus on food in Rural communities?

Goal 3:

- Number of people regularly eating food from the garden. Elder lunch program, buying from market, school program, etc.
- More plate demos, food demos, salad bar event, etc., to help introduce community members to the garden, vegetables and program. Possibly sell pre-made salad and sell at events or at the market, although there are state and federal food safety laws we would need to follow, would need a commercial kitchen.
    - Could more of the community be invited to Elders lunches?
    - Food prep concerns?
    - Could students use student store dollars to buy produce in the student store and bring it home to their families?
- Nutritional education
- Physical activity associated with working in the garden; there are average (rule of thumb) metrics for calories per hour burned working in a typical garden.

Goal 5 Financial Sustainability

- Streamlining sales and distribution could involve more sales to fewer places; higher quantity to fewer buyers to reduce administration. Food hub sales could be good for that reason; allows Tyonek Grown to sell to more people with only a single drop off and online sales.

Data collection processes

- The evaluation includes sample survey questions and recommendations for working with partners to administer the surveys. It's easier to drop a few questions about the garden into surveys others are already doing, cuts down on survey fatigue. Potential survey opportunities:
    - Tyonek Grown administer its own survey at health fairs
    - Include questions in Alaska Department of Fish and Game subsistence surveys
    - Include questions in Health Department surveys
- Harvest record sheet is straightforward and works well.
- Sales record sheet is cumbersome because it requires more time and thought to fill out at the market while sales are happening. Suggesting it be reformatted and columns filled out mostly before and after market sales transactions to make the sales process smoother.
    - Update the sales record sheet to one that is similar to the market receipt.
    - The Tribal center refrigerator has a sales sheet, but it isn't getting filled out. Only the Tyonek market is filling out the sales sheet. But receipts are getting filled out at the refrigerator. If the receipts are being kept then this sheet could be filled in later as total sales for that day. Possibly change the process for one person to fill out the sheet each day with the receipts. This requires itemized receipts every time.

    - Simplify to total sales, leftovers and where the leftovers went. How can we prevent loss of produce by going bad without being sold? The minutia of the data collection is not working. Switches hands and things are rushed.
    - Have a category for "other sales"?
- TTCD used to have a distribution sheet but discontinued it.
    - It's difficult to see where everything is being sold.
    - Where is everything going?
        - Harvests>Market> whatever doesn't sell goes to Anchorage, Tribal Center fridge, etc.
    - How are these decisions made?
        - We look at what is selling and then don't restock things in the fridge that aren't selling.
        - Chris and Gwen discuss donations for the elders' lunch program, or he can take whatever he needs from the fridge.
        - For distribution to elders for home consumption, there was an issue because the age limit for being considered an elder in Tyonek was 60 and 55 in Anchorage. Tribal members wanted the age cutoff to be the same to keep the program fair between Anchorage and Tyonek-based tribal members.
        - School tells the garden and TTCD what they want.

Other notes:

- Elders are given potatoes for home consumption (outside of the elders' lunch program).
- SNAP will be eligible from one machine, and it will travel with the TTCD staff. Offline vouchers can be processed, but this hasn't been developed fully. The goal is to have SNAP assistance benefits for sales at the market.

Attachment B. Financial Sustainability Supplement

Financial Sustainability

At the time of this evaluation, TTCD has begun to develop a business plan. This evaluation is not meant to replace that effort. However, some helpful information has been discovered through the evaluation process toward achieving Goal 5, financially sustaining the garden; that information is presented below.

Defining Financial Sustainability

Defining financial sustainability for the Tyonek Grown program is a little tricky because it does not conform to a standard, proven business model. Because Tyonek is such a small, remote community, the Tyonek Garden program straddles several program or business models that tend to differentiate themselves in more densely populated areas:

- The Tyonek Grown program is health, community and youth development outcome-oriented in the same way that community gardens (in which residents rent individual plots to cultivate their own produce) are. Most of these community garden programs are operated as a not-for-profit community service and rely primarily on grants, local government funding (through parks and recreation departments), fundraising and donation-driven development, and a smaller proportion of educational and user fees. Earned income in these models tends to be measured against 'cost recovery' targets rather than profit targets.
- The Tyonek Grown program is also an educational program that teaches community-oriented gardening and farming skills to Tyonek residents and residents of other Alaska communities, in much the same way that a University Extension program offers education and technical assistance in these areas. University programs rely primarily on grant funding, university donors, income from patents or endowment funds, and to a much smaller extent, tuition fees.
- With the strong partnership with Tebughna School, the Tyonek Grown program also operates much like a school garden, which is entirely mission-driven. These not-for-profit programs focus on education, youth development, and food security. They tend to be funded publicly through school budgets, grant funding, and may be supplemented with private donations.
- Finally, the Tyonek Garden also operates like a farm business, in which produce is grown and sold at several outlets with the intention of generating a level of earned income that can sustain the program's operating costs.

The program's income distribution, which has been heavily grant-funded over the past five years, reflects this mix of program functions. A strong reliance on grant funding also reflects the initial need for start-up funding, including garden infrastructure such as an irrigation system and high tunnels, that are necessary for growing produce at any meaningful volume in Alaska. TTCD aims to shift this distribution and increase the amount and proportion of earned income relative to other funding sources. The Tyonek Grown business plan will define specific targets for earned income and other sources.

At the time of this evaluation, TTCD has set as a goal for garden operations to become more financially self-sustaining, meaning that non-federal grant donations and earned income equals or exceeds the cost of seeds, supplies and minor equipment, paid garden support staff (including the Garden Supervisor and interns), and sales and distribution expenses. This would require the garden to generate at least $20,000 to $25,000.

Revenue generation from produce sales was roughly the same between the 2015 season and the 2016 season, suggesting that meeting TTCD's goal would require increasing production and sales, while maintaining or decreasing operating costs, without overwhelming current staff.

Growing the Customer Base and Streamlining Operations

Tyonek people wanted gardening in their community because the practice had been lost over the few decades, leaving the local culture without a strong agricultural tradition. Although subsistence hunting, fishing and other wildfood harvest is deeply embedded in the village's cultural traditions, locally grown garden produce is largely a new element that the community is now choosing to incorporate into its day-to-day ways of living. Finding new 'food demo' opportunities to introduce residents to eating Tyonek Grown produce is an important element of TTCD's efforts to expand their customer base. For example, during the evaluation one informant suggested finding opportunities to stock Tyonek Grown produce in the student store, or working with other community partners to feature Tyonek Grown produce at community events.

Regular sales to fewer, larger outlets will help streamline operations for the garden. The School is now paying for Tyonek Grown produce on a two-week order schedule through a farm-to-cafeteria program. The Anchorage Hub is a new point of crop sales for the Tyonek Grown Program and could help yield additional revenue for the program. The food hub has a single weekly drop off for orders with the goal of increasing access to local foods and creating easier distribution to restaurants and individuals. Producers sign up for $40 annually and customers join for $20 annually. Two additional strategies to help realize TTCD's revenue generation goal include:

- Provide additional food safety training to garden staff and interns, and set up a larger sterile surface for preparing produce for sales and distribution (e.g., stainless steel folding table). This would ensure that the Tyonek Garden produce meets the food safety standards of a wider number of retail outlets.
- Grow high net-value crops that satisfy a produce requests from within and outside the Native Village of Tyonek and increase the net revenue per 100-square feet of cultivation.

Tyonek Grown staff could also explore the use of tools such as the **FarmFan App,** which sends a text message to customers an hour before the market starts to remind them to attend, and also includes a customer rewards program that acknowledges loyalty to the farm (http://www.farmfanapp.com/info).

Educational and Other Earned Income

Especially as NVT takes greater responsibility for the day-to-day operations of the Tyonek Garden, TTCD may choose to focus more time and effort on outreach to other communities. This could involve expanding the existing annual three-day Tyonek Grown community garden workshop, offering more webinars and online education or technical assistance, conference and speaking engagements, or development and promotion of educational materials, books, etc. Two case studies offer ideas about alternative income generating activities:

Case Study: The City of Portland Oregon Community Gardens

The City of Portland Oregon Community Gardens program developed a publicly accessible business plan (online at: https://www.portlandoregon.gov/parks/article/473894). It includes a business action plan worksheet that lists performance measures and strategies for increasing community involvement and physical

garden expansion (page 25-26). The plan tracks 'cost recovery' targets through a combination of earned and donated income that includes:

- fundraising through "Friends of" group,
- service funding leveraged from public and private organizations and businesses,
- individual plot rental fees, and
- educational programming fees (classes and technical assistance).

At some point in the future, Tyonek Grown could possibly make a few individual garden plots available for rental, if any community members were willing to pay a fee for a plot that is already fenced with an irrigation system and technical assistance available onsite. TTCD could also continue to develop and sell educational materials, such as books, workshops, and online courses.

Case Study: Curtis Stone

This farmer in British Columbia reports that he grosses $100,000 on a quarter acre per year. His farm produces eight months out of the year, with two people working full time eight months out of the year and part-time the other four months. His farm consists of several small plots in a suburban area, some of which include his house and yard, some of which are separate lots that he does not own. He focuses on growing high-value crops such as salad greens, which he sells to local restaurants. He does not report how much money he earns from urban farming speaking engagements, educational materials, workshops, T-shirts, etc. all of which are promoted by his website and YouTube series "The Urban Farmer with Curtis Stone." (http://theurbanfarmer.co/)

Donations and Grant Funding

With such a strong educational emphasis, the Tyonek Grown program is likely to continue to rely on donations and grant funding to fund some portion of program activities. Tracking data relevant to these sources will be helpful for TTCD:

- Volunteer hours can be recorded as an in-kind donation and potentially used as a match.
- Monetary donations can potentially be used as a match.
- Donations of produce can potentially be used as a match as an in-kind donation, and/or a demonstration of the Tyonek Grown program filling a community need.

Tyonek Grown staff track volunteer hours, monetary donations, and donations of produce. The evaluation recommends that TTCD continue to track these as consistently as possible to build partnerships and leverage funding for the program's mission-driven activities. Tracking interest in the intern program (with numbers of interns, returning interns, and applications for internships) could help TTCD work with partners to sponsor one or more interns.

Attachment C. Literature Reviewed

Literature Reviewed

Tyonek Grown

Tyonek Tribal Conservation District (2017). TTCD 2017 Dashboard.

Tyonek Tribal Conservation District (2016). TTCD 2016 Harvest Records.

Tyonek Tribal Conservation District (2017). TTCD 2017 Harvest and Sales Record Sheets.

Tyonek Tribal Conservation District (2017). Tyonek Grown and Tyonek Tribal Conservation District. Tyonek Tribal Conservation District website, accessed April 19, 2017. http://ttcd.org/programs/community-agriculture-program/

Tyonek Tribal Conservation District (2016). Tyonek Grown: Harnessing Local Resources to Grow Healthy Communities.

Tyonek Tribal Conservation District (2015). Tyonek Grown Program: A Business Plan for Sustainability (DRAFT).

Tyonek Tribal Conservation District (2017). Tyonek Grown Program: Marketing Plan (DRAFT).

Tyonek Tribal Conservation District (2016). Tyonek Tribal Conservation District Community Survey responses.

Tyonek Tribal Conservation District (2015). USDA-NIFA 2014 Beginning Farmer and Rancher Development Program Awards: 2015 Progress Report. Education, Outreach, and Training to Alaska Native Beginning Farmers and Ranchers.

Tyonek Tribal Conservation District (2017). Beginning Farmer and Rancher Development Program Tyonek Workshop Application.

Community Food Project Evaluation

Born, Holly, George Kuepper, and Lisa Cone (2006). Organic Market Farm Documentation Forms. Paul Driscoll (Editor) and Cynthia Arnold (Production), National Center for Appropriate Technology (NCAT). A National Sustainable Agriculture Assistance Program (ATTRA) Project. Available online: https://attra.ncat.org/attra-pub/download.php?id=23

Farming Concrete (2015). Data Collection Toolkit: Methods for measuring the outcomes and impacts of community gardens and urban farms. Prepared in partnership with Civic Ecology Lab and Cornell University under a Creative Commons Attribute-ShareAlike 4.0 International License. Available online: https://farmingconcrete.org/barn/data-collection-toolkit/

National Research Center, Inc. (2006). Community Food Project Evaluation Toolkit, Third Edition. Prepared by the National Research Center, Inc. for the Community Food Security Coalition. Sponsored by the USDA Community Food Projects Program. Available online: https://nesfp.org/sites/default/files/uploads/cfp_evaluation_toolkit.pdf

National Research Center, Inc. (2010). Community Food Projects: Indicators of Success. Prepared by the National Research Center, Inc. for the Community Food Security Coalition. Available online: https://www.commdev.org/userfiles/CFP_IOS_FINAL_Report-22Apr2011_0.pdf

Portland Parks and Recreation (2009). Community Gardens Business Plan. Prepared by the Portland Parks and Recreation Department. Available online: https://www.portlandoregon.gov/parks/article/473894

United States Department of Agriculture (2015). Generic Logic Model for NIFA Reporting, Version 1.3. Available online: https://nifa.usda.gov/sites/default/files/resource/Generic%20Logic%20Model%20for%20NIFA%20Reporting.pdf

Public Health Benefits of Gardens

The health benefits of the exercise involved in gardening activities, mental/emotional wellbeing associated with community gardening, and the consumption of fresh vegetables has been established in several public health studies.

Centers for Disease Control and Prevention (2010). Community Gardens. CDC website, accessed October 11, 2017. https://www.cdc.gov/healthyplaces/healthtopics/healthyfood/community.htm (annotated bibliography of literature supporting the benefits of community gardens)

Centers for Disease Control and Prevention (2014). Gardening Health and Safety Tips. CDC website, accessed October 11, 2017. https://www.cdc.gov/family/gardening/ (includes guidelines for physical activity in the garden)

Darnton, Julia and Lauren McGuire (2014). What are the physical and mental benefits of gardening? Michigan State University Extension website, accessed October 11, 2017. http://msue.anr.msu.edu/news/what_are_the_physical_and_mental_benefits_of_gardening

According to the Centers for Disease Control and Prevention (CDC), moderate-intensity level activity for 2.5 hours each week can reduce the risk for obesity, high blood pressure, type 2 diabetes, osteoporosis, heart disease, stroke, depression, colon cancer and premature death. The CDC considers gardening a moderate-intensity level activity, and can help you to achieve that 2.5-hour goal each week. Additionally, those that choose gardening as their moderate-intensity exercise are more likely to exercise 40-50 minutes longer on average than those that choose activities like walking or biking. By venturing outdoors to various community garden spaces around Michigan, you not only assist in keeping their community vibrant, but become healthier in the process. For example:

- "A ten percent increase in nearby green space was found to decrease a person's health complaints in an amount equivalent to a five year reduction in that person's age" according to the Gardening Matters nonprofit of Minneapolis' page, "Multiple Benefits of Community Gardens."

- Exercising both the arms and legs is recommended to help prevent illnesses like coronary disease. With most everyday activities only involving the arms, gardening is a great way to incorporate the entire body while exercising.
- According to the journal *Biological Psychiatry*, some experts even say the fresh air can help prevent Attention Deficit Hyperactivity Disorder (ADHD) and result in higher test scores among students.

Gardening has also emerged in recent years as a scientifically proven stress reliever. Stress can cause irritability, headaches, stomach aches, heart attacks and worsen pre-existing conditions in the body. An experiment published in the Journal of Health Psychology compared gardening to reading as a stress-relieving activity; test subjects that gardened experienced a more significant decrease in stress when compared to the subjects that were assigned to read.

Naprawa, Amanda Z. (2016). Title University of California Berkeley Wellness Magazine (online), accessed October 11, 2017. http://www.berkeleywellness.com/healthy-eating/nutrition/article/community-gardens-growing-good-health

This phenomenon may be especially pronounced in children, for whom research has found that tending a garden not only encourages greater fruit and vegetable consumption, but can help prevent or even reverse childhood obesity. In a study published in the *American Journal of Preventive Medicine,* for instance, researchers followed families in North Carolina who took part in a seven-week gardening, cooking, and nutrition workshop. Each family worked a plot at one of three community gardens. During specific open times, staff assisted families in preparing, planting, tending, and harvesting their gardens. Community-building activities such as seasonal potluck dinners using foods grown in the garden were also encouraged.

At the end of the seven weeks, not only had the children in the program increased their consumption of fruits and vegetables in general, but roughly 17 percent of those who were overweight saw a reduced body mass index (BMI). Another study based in East Los Angeles showed similar results. And in a Sacramento-based pilot program, 100 percent of participants, many of them school-age children, reported increasing their consumption of fruits and vegetables after participating in a community garden…

…Children who participate in garden-based learning during the school day show increased levels of physical activity compared to those who learn only inside a classroom. Some evidence suggests that such programs may improve academic performance as well. Community gardens are also a great way to build social support among neighbors.

NC State Extension. Research Regarding the Benefits of Community Gardens. NC State Extension website, accessed October 11, 2017. https://nccommunitygardens.ces.ncsu.edu/nccommunitygardens-research/

"Adults with a household member who participated in a community garden consumed fruits and vegetables 1.4 more times per day than those who did not participate, and they were 3.5 times more likely to consume fruits and vegetables at least 5 times daily."

1 Department of Food Science and Human Nutrition, Michigan State University, East Lansing, Michigan

2 Prevention Research Center of Michigan/University of Michigan School of Public Health, Ann Arbor, Michigan

Source: Alaimo, Katherine PhD 1, Elizabeth Packnett MPH, Richard A. Miles BS and Daniel J. Kruger PhD. Fruit and Vegetable Intake among Urban Community Gardeners, Journal of Nutrition Education and Behavior, Volume 40, Issue 2, March-April 2008, Pages 94-101.

Community gardeners consumed fruits and vegetables 5.7 times per day, compared with home gardeners (4.6 times per day) and nongardeners (3.9 times per day). Moreover, 56% of community gardeners met national recommendations to consume fruits and vegetables at least 5 times per day, compared with 37% of home gardeners and 25% of nongardeners. The qualities intrinsic to community gardens make them a unique intervention that can narrow the divide between people and the places where food is grown and increase local opportunities to eat better.

Source: Jill S. Litt, Mah-J. Soobader, Mark S. Turbin, James W. Hale, Michael Buchenau, and Julie A. Marshall. 2011. The Influence of Social Involvement, Neighborhood Aesthetics, and Community Garden Participation on Fruit and Vegetable Consumption. American Journal of Public Health: August 2011, Vol. 101, No. 8, pp. 1466-1473.

Nutrition knowledge scores for students in the nutrition education only (NL) and the nutrition education plus gardening (NG) were significantly great than those in the control group (CO) and these differences were maintained at the six-month follow-up. Posttest Vegetable Preference scores for the NL and the NG groups were each significantly greater than those of the CO group for broccoli and carrots. In addition, the NG group was significantly greater than both the other groups on snow peas and zucchini. At the six-month follow-up both the NL and NG groups remained significant for carrots and the NG was also still significant for broccoli, snow peas and zucchini. There was no significant difference among the three sites in relation to the student's willingness to taste the vegetables.

Read More: http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2010.300111

Source: Morris, Jennifer L., and Sheri Zidenberg-Cherr,. 2002 Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables, Journal of the American Dietetic Association, Volume 102 Number 1, January 2002 Pages 91-93

Community gardens are one way that residents have mobilized to beautify urban neighborhoods, improve access to fresh produce, and engage youth. Qualitative case studies were conducted of two neighborhood-based community gardens with youth programs. Data collection included participant observation and in-depth interviews with adult gardeners and neighbors, youth, and community police officers. Results suggest that the garden programs provided opportunities for constructive activities, contributions to the community, relationship and interpersonal skill development, informal social control, exploring cognitive and behavioral competence, and improved nutrition. Community gardens promoted developmental assets for involved youth while improving their access to and consumption of healthy foods.

1. Department of Health Behavior & Health Education, University of Michigan School of Public Health, Ann Arbor, MI

2. Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI Online Publication Date: 11 December 2008

Source: Ober Allen, Julie, Katherine Alaimo, Doris Elam; and Elizabeth Perry. 2008 Growing Vegetables and Values: Benefits of Neighborhood-Based Community Gardens for Youth Development and Nutrition. Journal of Hunger & Environmental Nutrition, Volume 3, Issue 4, pages 418 – 439

Stress-relieving effects of gardening were hypothesized and tested in a field experiment. Thirty allotment gardeners performed a stressful Stroop task and were then randomly assigned to 30 minutes of outdoor gardening or indoor reading on their own allotment plot. Salivary cortisol levels and self-reported mood were repeatedly measured. Gardening and reading each led to decreases in cortisol during the recovery period, but decreases were significantly stronger in the gardening group. Positive mood was fully restored after gardening, but further deteriorated during reading. These findings provide the first experimental evidence that gardening can promote relief from acute stress.

Source: Van Den Berg, Agnes E., and Mariette H. Custers. 2011. Gardening Promotes Neuroendocrine and Affective Restoration from Stress. Journal of Health Psychology. 2011. 16:3-11

Ohly, Heather, Sarah Gentry, Rachel Wigglesworth, Alison Bethel, Rebecca Lovell, and Ruth Garside (2016). A systematic review of the health and well-being impacts of school gardening: synthesis of quantitative and qualitative evidence. BMC Public Health. 2016; 16: 286. Published online 2016 Mar 25. doi: 10.1186/s12889-016-2941-0, accessed October 11, 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4807565/

Attachment D. Sample Survey Questions

Sample Survey Questions for Tyonek Grown

The following questions are organized into three sections and could be used in different surveys with different target audiences. These questions are targeted towards: youth, general (adult) community members, and individuals who directly participate in the garden through volunteering or some other means of partnership.

When choosing which questions to include in the survey, it is a good idea to be mindful of the location and time people will have to take the survey. Question choices should be tailored to address a specific informational need. Demographic questions are typically asked to all audiences to help establish consistent metrics for future evaluation.

General Community Survey Questions: Tyonek Grown Garden

1. About how often do you participate with the Tyonek Grown Garden during the growing season (spring through fall)?

I volunteer with the garden.	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day
I eat produce from the Tyonek Grown Garden.	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day
I buy produce from the Tyonek farm market.	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day
I buy produce from the refrigerator at the Tribal Center.	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day
My kids participate in lessons and programs with the Garden as part of their educational experiences.	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day
I participate in some other way (please specify below)	Never	Once a month	Every two weeks	Once a week	a few times a week	Every day

Other:_____

2. How has the Tyonek Garden has impacted your personal health and wellbeing, and/or the health and wellbeing of the community?

_____

_____

_____

_____

3. **Do you grow food in a personal garden?**

   - ☐ Yes
   - ☐ No

4. **Over the last three months, about how much of your household's food supply came from either your garden or the Tyonek Grown garden?**

   - ☐ 0%
   - ☐ 1-25%
   - ☐ 26-50%
   - ☐ 51-75%
   - ☐ 76-100%

General Community Survey Questions: Nutrition and Food Security

1. **Where do you purchase/get your food? (Please check all that apply.)**

   - ☐ Major grocery stores and supermarkets
   - ☐ The Tyonek Garden, weekly farm market and/or Tribal Center refrigerator
   - ☐ Subsistence practices such as fishing, hunting, and gathering
   - ☐ Convenience stores
   - ☐ Personal garden
   - ☐ Warehouse stores (Sam's Club, Costco, etc.)
   - ☐ Fast food restaurants
   - ☐ Other restaurants (**not** fast food)
   - ☐ Other (please describe) _____

2. **How often do you eat the following types of healthy foods, on average? (Please circle the response that best represents your answer.)**

Fruit	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day
Vegetables	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day
Whole grains (bread, rice, or other grains)	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day
Beans/nuts	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day
Store-bought lean meats, subsistence-caught fish or meat	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day
Low-fat dairy	Never	once/week	a few times/week	once/day	a few times/day	4+ times/day

3. **How much do the following issues affect your ability to eat healthy food? (Please circle the number that best represents your response: 1 = completely and 5 = not at all.)**

Price of healthy foods	1	2	3	4	5
Quality of foods in the places I shop	1	2	3	4	5
Availability of healthy foods	1	2	3	4	5
Time to shop/acquire food	1	2	3	4	5
Time to prepare food	1	2	3	4	5
Knowledge of how to cook healthy foods	1	2	3	4	5
Availability of the food my culture eats	1	2	3	4	5
Ensuring that purchased food has a long shelf-life	1	2	3	4	5
Availability of equipment to prepare and store food	1	2	3	4	5
Preferences of the people I live with	1	2	3	4	5
Other, please specify_____	1	2	3	4	5

4. **Within the past three months, how often have you experienced the following? (Please circle the response that best represents your answer.)**

Ran out of money before I was able to acquire enough food	**Never**	**Once**	**2-3 times**	**4-5 times**	**6+ times**
Sought events and places to get free food	**Never**	**Once**	**2-3 times**	**4-5 times**	**6+ times**
Relied on others for free food	**Never**	**Once**	**2-3 times**	**4-5 times**	**6+ times**

5. **How many sodas or other sugar sweetened beverages do you drink each week, on average?**

- ☐ None
- ☐ 1-2 per week
- ☐ 3-4 per week
- ☐ 5-7 per week
- ☐ More than 8 per week

Demographics Questions

1. **What is your gender?**
    - ☐ Male
    - ☐ Female
    - ☐ Other
    - ☐ I prefer not to answer this question
2. **Are you a tribal member of the Native Village of Tyonek?**
    - ☐ Yes
    - ☐ No
    - ☐ I prefer not to answer this question
3. **What is your household's annual income?**
    - ☐ Less than $20,000
    - ☐ $20,001 to $30,000
    - ☐ $30,001 to $40,000
    - ☐ $40,001 to $50,000
    - ☐ $50,001 to $60,000
    - ☐ $60,001 to $70,000
    - ☐ $70,001 to $80,000
    - ☐ $80,001 to $90,000
    - ☐ Greater than $90,000
    - ☐ I prefer not to answer this question
4. **What is your age?**
    - ☐ 18-24
    - ☐ 25-34
    - ☐ 35-44
    - ☐ 46-54
    - ☐ 55-64
    - ☐ 65 or older
5. **How long have you lived in the Native Village of Tyonek? _____ years**

6. **How many people are in your household?**

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

7. **How many people in your household are under the age of 18?**

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6 or more

Program Preference Questions

1. **Please help us understand which Tyonek Grown crops you enjoy the most and how you like to prepare them.**

Crop	I don't eat it	I eat it raw	I cook it	How do you prepare it?
[name of crop]	I don't eat it	I eat it raw	I cook it	
[name of crop]	I don't eat it	I eat it raw	I cook it	
[name of crop]	I don't eat it	I eat it raw	I cook it	
[name of crop]	I don't eat it	I eat it raw	I cook it	
[name of crop]	I don't eat it	I eat it raw	I cook it	

2. **Are there other fresh produce crops and/or varieties you would like to be able to get from the Tyonek Grown garden?**

   _____
   _____
   _____
   _____

3. **How do you get information or inspiration about how to prepare produce? (Please check all that are true for you.)**

   - ☐ I find recipes on the internet.
   - ☐ I get recipes from friends and family.
   - ☐ I make up my own recipes.
   - ☐ I get recipes from Tyonek Grown.
   - ☐ I don't prepare produce.

4. **Would you like to get recipes from Tyonek Grown for the produce we sell?**

   - ☐ Yes
   - ☐ No
   - ☐ I don't have a preference.

5. **How interested are you in learning about the following topics? (Please circle the number that best represents your response: 1 = very interested and 5 = not interested at all.)**

Growing your own food	1 2 3 4 5
Participating in the Tyonek Grown garden	1 2 3 4 5
Food preservation (canning, pickling, and other long-term storage methods)	1 2 3 4 5
Cooking with healthy foods	1 2 3 4 5
How to select healthy foods from the store	1 2 3 4 5
Budgeting for healthy food choices	1 2 3 4 5

Specific Questions for Youth

1. **What is your relationship with the Tyonek Garden?**

   - ☐ Intern
   - ☐ Volunteer
   - ☐ School participant
   - ☐ Interested individual
   - ☐ I have no current relationship with the Tyonek Garden
   - ☐ Other, please specify_____

2. **How often do you participate in garden activities during the growing season (spring through fall)?**

   - ☐ Daily
   - ☐ 4-5 times a week
   - ☐ 2-3 times a week
   - ☐ Once a week
   - ☐ Three times a month
   - ☐ Two times a month
   - ☐ Once a month
   - ☐ Less than once a month
   - ☐ I don't participate with the Tyonek Garden

3. **What do you like best about the Tyonek Grown garden?**

   _____
   _____

4. **What do you think could be improved about the Tyonek Grown Garden?**

   _____
   _____

5. **In what ways do you think your life is different (better or worse) because of the garden?**

   _____
   _____

6. **Please indicate how much you agree or disagree with the following statements. (Please circle the number that best represents your response: 1 = strongly agree, 3 = neutral, and 5 = strongly disagree.)**

Because of the Tyonek Grown garden, I…

…eat more fresh fruits and vegetables	1 2 3 4 5
…eat more organic food	1 2 3 4 5
…eat less packaged food	1 2 3 4 5
…eat less fast food	1 2 3 4 5
…drink fewer sugar sweetened beverages	1 2 3 4 5
…feel more confident in class	1 2 3 4 5
…have a better understanding of what I want to do in the future	1 2 3 4 5
…am more physically active	1 2 3 4 5
…try new kinds of food	1 2 3 4 5
…eat more foods that are traditional for my culture/family background	1 2 3 4 5

7. **Please indicate how much you agree or disagree with the following statements. (Please circle the number that best represents your response: 1 = strongly agree, 3 = neutral, and 5 = strongly disagree.)**

Because of the Tyonek grown garden, I…

…have learned more about gardening	1 2 3 4 5
…have gained new skills	1 2 3 4 5
…have learned about running a small business	1 2 3 4 5
…have learned more about the environment	1 2 3 4 5
…care more about the environment	1 2 3 4 5
…feel more involved in my community	1 2 3 4 5
…feel a strong connection to my culture	1 2 3 4 5
…have made new friends	1 2 3 4 5

Other example indicators that could be substituted for items in questions 6 and 7:

- New knowledge and skills
- Increased gardening knowledge
- Increased gardening skills
- Increased business knowledge
- Connection to environment
- Connection to food source
- Increased knowledge of environment
- Increased care for environment
- Increased connection to community
- New/deeper friendships
- Spend more time with family
- Increased leadership skills
- Improved decision making
- Improved goal setting
- Increased planning skills
- Improved problem-solving skills
- Increased conflict resolution skills
- Improved communication skills
- Improved social skills
- Increased teamwork
- Improved self-concept
- Improved sense of self
- Increased empowerment
- More positive view of future
- Increased sense of purpose

Specific Questions for Interns

1. **How long have you been a Tyonek Grown intern?**

   - ☐ This is my first year
   - ☐ Two years
   - ☐ Three years
   - ☐ Other, please specify_____

2. **What have you learned from your experiences as a Tyonek Grown intern? How has the internship helped you in other areas of your life?**

   _____
   _____
   _____
   _____

3. **Would you intern at Tyonek Grown again?**

   _____
   _____
   _____
   _____

4. **Would you recommend the Tyonek Grown internship to other students? Why or why not?**

   _____
   _____
   _____
   _____

Specific Questions for Teachers

1. **Please indicate how often you use the Tyonek Garden as a teaching tool in the following subjects. (Please circle the number that best represents your response: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often.)**

Writing	1 2 3 4 5
Health	1 2 3 4 5
Math	1 2 3 4 5
Physical Education	1 2 3 4 5
Science	1 2 3 4 5
Social Studies	1 2 3 4 5
Fine Arts	1 2 3 4 5
Career and Technical	1 2 3 4 5
Languages	1 2 3 4 5
Other *(please explain below)*	1 2 3 4 5

_____

_____

2. **Please describe, as specifically as possible, <u>how</u> you use the Tyonek Garden as a teaching tool (e.g., project-based learning involving science experiments and observational learning in the garden, to demonstrate concepts in the classroom by relating them to garden activities, to demonstrate the real-life use of subjects and skills like mathematics and geometry in calculating the space and number of seeds required for a bed).**

_____

_____

_____

_____

_____

_____

3. **Please describe any improvements you have noticed among your students in attendance, educational aptitude, achievements, or social learning skills because of the garden.**

_____

_____

_____

_____

Attachment E. Strategic Plan Poster Template

Attachment F. Sample Revised Harvest and Sales Record Sheets

Attachment G. Dashboard Workbook