



# Tyonek Grown Program: A Business Plan for Sustainability

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## **I. Executive Summary**

In 2005, the Native Village of Tyonek and the Tyonek Native Corporation took historic action and joined forces to form the first tribal conservation district in the state of Alaska. Tyonek Tribal Conservation District (TTCD) is a non-regulatory, nonprofit 501c3 organization that addresses local issues through community-driven conservation. The rationale behind the formation of TTCD was to support local efforts in conserving and enhancing natural resources within the District boundaries. At TTCD, we work with landowners and stakeholders in the District to help them achieve their conservation goals.

Since formation, addressing food insecurity has been an important goal for TTCD. As a remote, rural community off the road system, Tyonek can be an expensive place to live. Fruits and vegetables are costly and difficult to ship, and this had led to an increase in processed foods with a longer shelf-life, and an increase in health problems. In 2012, the Native Village of Tyonek (NVT) requested assistance from TTCD in developing a community garden. Since that time, TTCD has worked with NVT and many other partners to develop the Tyonek Garden and the Tyonek Grown Program.

Through the Tyonek Grown Program, TTCD improves food security through community agriculture. The Tyonek Grown Program includes the Tyonek Garden, an organic garden run on renewable energy and focusing on youth education. This garden serves as a demonstration project and classroom for other TCDs and communities in rural Alaska that are interested in starting their own agricultural program. The program has expanded to include statewide outreach and education, and to include year-round production in Tyonek through a hydroponics system.

Gardening in Alaska has its challenges, but with hard work and cooperation, it is rewarding and productive. Garden programs in rural communities can help reduce the cost of access to healthy foods for families, inspire youth involvement while introducing healthy eating and lifestyle habits, create jobs, pass on cultural practices, and encourage people all over Alaska to do more for their communities. Through the Tyonek Grown Program, TTCD aims to improve food security not only in Tyonek but throughout Alaska.

## II. The Organization and Environment

### a. The Organization

Tyonek Tribal Conservation District (TTCD) is a non-regulatory, non-profit 501(c)(3) organization that addresses local issues through community-driven conservation. TTCD was formed through an agreement between the Native Village of Tyonek, Tyonek Native Corporation, and the US Department of Agriculture (USDA). TTCD is a tribal organization and consists of a board with representation from the Native Village of Tyonek IRA Council and the Tyonek Native Corporation Board of Directors, as well a representative selected by the other board members through public notice.

Our District shares its boundaries with Game Management Unit 16B and covers an area of 6.6 million acres, including the communities of Tyonek, Beluga, Alexander Creek, Skwentna, and Shirleyville. This area was chosen by the TTCD Board of Directors as the District because it includes the traditional hunting and fishing grounds of the Dena'ina Athabascan residents of Tyonek. The southern half of the District including Tyonek, Beluga, and Shirleyville is part of the Kenai Peninsula Borough. The northern half of the District including Skwentna and Alexander Creek is part of the Mat-Su Borough.

The Native Village of Tyonek (NVT) is a Dena'ina Athabascan village located 43 miles southwest of Anchorage. Tyonek has long been home to the Tebughna, or "Beach People." Today there are about 190 residents in Tyonek; however, the Tyonek Native Corporation (TNC) has over 800 shareholders that can practice subsistence hunting, fishing, and gathering within the District. The community has one school that currently educates about 35 students in grades K-12. The community is accessible by plane or boat, but is not connected by road to Anchorage.

Dena'ina Athabascans arrived in the Cook Inlet region between 500 and 1000 AD. In pre-contact times, it is estimated that 4-5,000 people were living in West Cook Inlet within the TTCD boundaries. Russian fur traders moved into the area in the 1700s, followed by Euro-Americans in the 1800s. In the 1950s and 1960s, oil and gas companies began exploring the Cook Inlet region, and when gas deposits were found several gas companies moved into the area, many of which are still in operation today. From the 1970s to the early 2000s, sporadic commercial logging occurred on the lands surrounding Tyonek. Extensive road building has occurred to facilitate the logging of trees and access to drilling sites.

The rapid development that occurred in Tyonek during the 1900s, as well as the history of interference from Russians and Euro-Americans for the past three centuries left an impact on the community of Tyonek and the natural resources in the region. In the early 2000s, leaders in Tyonek began looking for ways to take a greater role in determining their own natural resource future, instead of having this be decided for



them. At about this time, Tyonek leaders learned about a type of organization known as a tribal conservation district which had been in existence since the 1950s in the lower 48, but did not yet exist in the state of Alaska.

TTCD officially formed on August 25, 2005, becoming the first tribal conservation district in the state of Alaska. The rationale behind the formation of TTCD was to support local efforts in conserving and enhancing natural resources within the District boundaries. At TTCD, we work with landowners and stakeholders in the District to help them achieve their conservation goals.

TTCD's mission is to conserve, enhance, and encourage the wise use of natural resources. Our core values are to meet the needs of our stakeholders, to form cooperative relationships, and to use what the earth has to give. TTCD has four strategic directions: 1. Monitor and restore fish and wildlife habitat; 2. Improve food security through community agriculture; 3. Support sustainable practices through waste reduction and energy conservation; and 4. Provide conservation education and outreach.

## **b. The Community Need**

As a result of Tyonek's history as described in the above section, the community of Tyonek is now faced with several challenges and needs that must be met. These needs include maintaining healthy natural resources, food security, effective communication with stakeholders, and youth involvement.

### Healthy Natural Resources

Subsistence, or the use of fish, wildlife, and plants for home use, is vital for the community of Tyonek. The strong connection between the people of Tyonek and the land and its resources is intertwined with Tebughna culture and history. For this reason, TTCD is dedicated to monitoring and conserving these resources.

For decades, development companies have utilized resources in the Tyonek area, in addition to the local subsistence use of resources by the people of Tyonek, and by other residents of the District. However, very little data on the current status of many of these resources is locally available. Water and air quality, salmon populations, forest health, wildlife populations, invasive species, and many more natural resource concerns were not monitored by any local entity. Federal and state entities occasionally monitored a few of these components, but often sporadically and without local input. Having more local involvement in this process was a major driver in the development of Tyonek Tribal Conservation District.

Even without scientific monitoring of resources, by the 2000s it was becoming clear to local residents and stakeholders that several resources of major importance to the Tebughna were in danger. Salmon and moose populations, two keystone resources for

residents, were decreasing, and there were no plans in place to reverse this trend. Salmon in particular face several threats from development, invasive species, and barriers to habitat due to improper road installation across streams. Forests have been impacted by spruce bark beetle infestations, and face the threat of invasive species. Although both the Native Village of Tyonek and the Tyonek Native Corporation have a stake in ensuring that salmon and other resources are conserved for current and future generations, both entities have many other concerns to focus on. To address these issues, a local organization with a focus on conservation was needed.

#### Food Security

As a remote, rural community Tyonek can be a challenging and expensive place to live. Although most households practice subsistence, much of the food needs of Tyonek residents are met through purchased food. There is not a supermarket in Tyonek, and food costs can be quite high. Non-subsistence foods must be purchased in Anchorage, and arrive via airplane at \$0.39/lb. (in 2017) in addition to the food's cost in the store. Perishable items like fruits and vegetables are expensive and difficult to ship, leading to a decrease in their presence in rural villages in favor of processed food items with preservatives for increased longevity. This contributes to the growing diabetes problem and other health problems in Tyonek.

#### Effective Communication with Stakeholders

In the Tyonek area, Tyonek Native Corporation is the major landowner. The Native Village of Tyonek is the federally recognized tribe and the governing body for Tyonek. These two entities are separate but also connected in many ways. Cook Inlet Region Inc. (CIRI), the regional native corporation for this area, owns land near Tyonek as well as the subsurface rights for land owned by Tyonek Native Corporation. State and federal entities, such as AK Department of Fish & Game, US Fish & Wildlife Service, and many others, have worked in the Tyonek area at various times. The Chugach Electric Power Plant is located in Beluga, just north of Tyonek, and there are many other companies in the area, such as ConocoPhillips, Aurora Gas, and Hilcorp to name a few. With so many groups and individuals working in the area, a need for communication of shared goals is important but often non-existent.

#### Youth Involvement

Because Tyonek is a remote community and it is expensive to travel outside (\$210/round trip to Anchorage as of 2017), opportunities for youth engagement and education can be rather limited. In order to have access to more opportunities, many Tyonek youth leave for boarding school in high school. Some families choose to move to Anchorage or Kenai for jobs or better education. This can cause issues with continuity and can disconnect youth from their culture and history. In particular, the subsistence and natural resource use component of culture has begun to have a much smaller role in the lives of Tyonek youth. As in many rural communities, there is a need to reconnect youth with their land, resources, and traditional values.

### III. Programs, Services, & Social Return on Investment

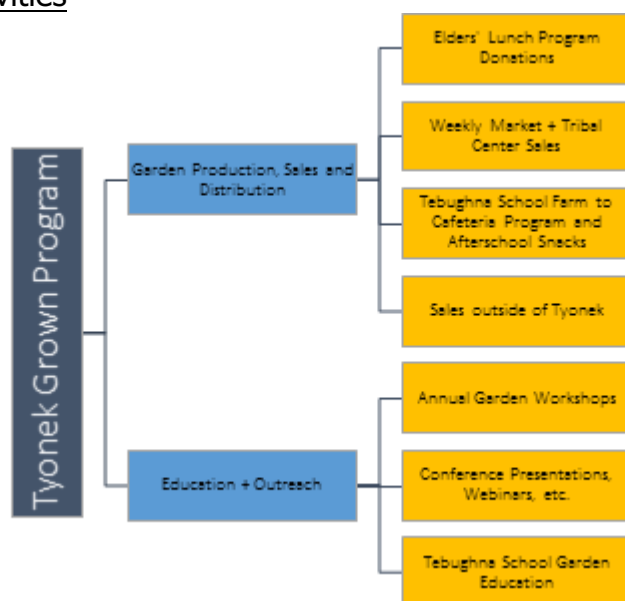
#### a. Programs and Services

##### 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 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; the Tebughna School, which is involved in all stages of food production, and the garden's technical manager, Tyonek Tribal Conservation District (TTCD).

The goals of the Tyonek people guide what is grown, how it is grown, and how food is distributed through Tyonek. TTCD currently manages organic vegetable production, soil and nutrient management, agricultural education activities, and seasonal garden employees. Tyonek Grown has successfully operated an annual multi-day, hands-on community gardening workshop from 2015-2017, provided onsite garden planning and technical assistance to six other remote Alaska communities, and held presentations. 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 since 2014.

## Current Program Activities



### **b. 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  $\frac{3}{4}$  of an acre is being farmed currently.

#### Garden Administration and Management

TTCD currently acts as the garden's technical manager. 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 significant involvement in the garden: students plant almost all the vegetable 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. Produce is also donated to important community events including annual harvest celebration and other important community events the Garden Committee approves. Tyonek Grown also contributes produce to Tebughna School Snacks (in 2015, 85 pounds of Tyonek Grown produce was served as school snacks). Local volunteers are also able to earn "Tyonek Bucks" by volunteering at the garden. In 2017, TTCD began 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 starting in the 2017-2018 school year.

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 TTCD's Anchorage offices and occasionally at other locations such as Cook Inlet Regional Inc. (CIRI). In 2017, TTCD 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.

### **c. 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 open to the community of Tyonek.

#### Outreach and Education to Other Communities

TTCD provides general training and technical assistance for other rural Alaska communities interested in starting gardening/farming projects. This is completed through various program pamphlets, presentations, videos, community visits, workshops, and online resources. The Tyonek Grown Summer Workshop 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 multi-day hands-on training and technical assistance for other rural Alaska communities interested in starting garden/farming projects.

### **d. 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 Tyonek Garden at NVT's 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. 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.

#### 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 with two Natural Resources Conservation Service (NRCS)-funded high tunnels (48 feet by 22 feet), solar-powered irrigation and ventilation systems, storage sheds, 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. Tyonek Grown Program staff are focused on slow, measured and manageable growth by following plans to develop fields within the fenced area of the garden. All fertilizers and compost are organic, the garden operates from renewable energy, and food is sold to support the economic future of the project. Production is also expected to grow in the future due to the completion of the hydroponic system in 2017 at the Tebughna School.

As the program has evolved over the past five years, program staff have learned from experiences and improved upon previous years by 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 donates to the Elders' Lunch Program and to Tribal Elders for cooking at home. Tyonek Garden also 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.

### *Program Goals*

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 Tyonek Grown Goals, Strategies, Objectives and Metrics Table included in the Appendix.

#### **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.**

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

## **e. Future Program/Service Ideas**

### Building the Garden

Future plans for building the garden include adding infrastructure and farming a larger portion of the available land within the garden. For more information, see the Facility Operations Plan section of this document.

### Garden Administration and Management

It is TTCD's 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.

### Garden Production

In the future, garden production at the Tyonek Garden will be organized to meet the objectives listed within the Tyonek Grown Goals, Strategies, Objectives and Metrics Table (See Appendix).



Produce Sales, Donations and Distribution

In the future, produce sales, donations and distribution at the Tyonek Garden will be organized to meet the objectives listed within the Tyonek Grown Goals, Strategies, Objectives and Metrics Table (See Appendix).

Education, Outreach and Youth Involvement

Education and youth involvement will continue to be an important goal of the Tyonek garden. Future education and outreach activities include:

Outreach and Education for Tyonek

In the future, TTCD and NVT could collaborate with partners who could provide classes or workshops on nutrition and food storage and preservation techniques for garden produce.

Outreach and Education to Other Communities

TTCD has provided general training and technical assistance for other rural Alaska communities interested in starting gardening/farming projects. As of this time in December 2017, TTCD no longer has a specific funding source for specific workshops. TTCD will continue to use current funding sources to share the Tyonek Grown story at local conferences and workshops. However, TTCD staff and board currently need to evaluate the feasibility of holding gardening workshops in Tyonek for individuals from other communities, and the feasibility of traveling to other remote communities in Alaska to provide education.

## **f. Benefit to the Community – the Social Return on Investment**

The Native Village of Tyonek is a rural community located 43 miles southwest of Anchorage only accessible by boat or plane with about 190 residents. 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 \$0.39/lb. (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 Grown Program has 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: planting and caring for seeds in the school in late winter, transplanting them in the garden in spring, turning in soil amendments, weeding,

harvesting, and distribution. 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 into the community. TTCD is helping to provide access to gardening education that has the potential to re-establish a culture of local production in Tyonek.

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 the Tebughna School snack program and lunch program. Community members can purchase fresh produce at a weekly market at the garden. If they are unable to go to the weekly market, community members can purchase produce at the Tribal Center from a glass-door refrigerator installed in 2016. 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. TTCD can now accept 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), that provided onsite garden planning and technical assistance to Nondalton, Prince of Wales Island, and other communities, produced a booklet for communities seeking to learn from Tyonek Grown's example, and held presentations and workshops at many statewide conferences. Several communities have started their own community gardens, citing Tyonek as the example that inspired them. These communities include Mountain Village, Nondalton, and Arctic Village.

In 2017, TTCD contracted Agnew Beck to provide an external evaluation of the Tyonek Grown Program. The evaluation found that 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 the Tyonek Garden.

## **IV. Market Analysis**

### **a. Stakeholder Analysis**

TTCD works with a vast number of diverse stakeholders as part of the Tyonek Grown Program.

Core stakeholders: Those who know about and are fully engaged and directly benefiting from the Tyonek Grown Program.

- Native Village of Tyonek (NVT)
- Tyonek Native Corporation (TNC)
- Tyonek residents
- Tebughna School

Secondary stakeholders: Those who know about the Tyonek Grown Program, but are not yet fully engaged.

- Tyonek shareholders
- Cook Inlet Region Incorporated (CIRI)
- Tyonek residents
- Hilcorp
- District landowners
- Chugach Electric
- ConocoPhillips
- USDA agencies including Natural Resources Conservation Service
- Three Mile Services Inc.
- Other Tribal Conservation Districts

Tertiary stakeholders: Those who know little about Tyonek Grown, and who need to be educated further about this program.

- District residents
- Alaska residents
- Restaurant owners in Anchorage
- Other Native Villages and Village Corporations

### **b. Industry and Market Trends**

Based on the Food System Assessment conducted by the State of Alaska (2012), the trend for smaller farms increased in 2007 with the majority of farms in Alaska (59%) being under 100 acres. In addition, the majority of farms (80%) are family owned/sole proprietorship; therefore, most Alaska farms are not owned by a corporation or cooperative. Based on USDA (2017) between 2007 and 2012, the number of farms increased by 11% from 686 to 762 farms, while the average acreage of a farm decreased by 15% (from 1,285 acres to 1,094 acres). The trend in Alaska is showing

that farmers are reducing the size of the farms, but the number of farms are increasing. USDA also reported that approximately 54% of farmers claim it is their main occupation while 46% report farming is not their primary occupation. In addition, based on the USDA, the market value of the products sold decreased by 7% between 2007 and 2012 (from \$83,119 to \$77,329). In 2012, the USDA also reported that the average farm in Alaska net cash (income-revenue) is \$11,271, however, 73% of the net sales for the farms were less than \$20,000 and 57% of the net sales for the farms were less than \$10,000. The top crops grown in Alaska include hay and silage, barley, vegetables, oats, and potatoes (<https://www.nass.usda.gov/>). Of the 762 farms, 49 farms or 6% were operated by American Indian or Alaska Native Farmers and 250 or 33% were operated by female farmers.

Meter and Goldenberg in partnership with The Alaska Food Policy and Alaska Department of Health and Social Services (2014) completed a comprehensive document on food security in Alaska statewide. Meter and Goldenberg (2014) defined food security through comments from Alaskan researchers as follows:

"In the context that we use it here, food security describes more than merely whether sufficient food is being produced, or a one-size- fits-all food-nutrition relationship, and incorporates all of the various ways in which a food system supports health in its various biophysical, social, and ecological dimensions (Loring & Gerlach, 2009). These include matters such as the importance of certain foods, food choice, local perceptions of hunger, uncertainty and worry about food safety or shortages, and any other psychosocial, sociocultural, or environmental stresses that result from the process of putting food on the table (S. Maxwell, 2001).

In rural, predominately Alaska Native communities, for example, wild fish and game are important for food security, not just because they are readily available, but also because they are important to the preservation and transmission of traditions and cultural practices, for the maintenance of social networks and interpersonal relationships, and for supporting individuals' sense of self-worth and identity (Fienup-Riordan, 2000; Loring & Gerlach, 2009; Loring, Gerlach, & Harrison, 2013).

Meter and Goldenberg extensively evaluated the history and trend of agriculture and food access in Alaska in communities on and off the road system. They reported that approximately \$2 billion is spent by Alaskans on food of which 95% or \$1.9 billion in food products is imported from outside the state. Food has been produced in Alaska but the cost of producing crops (shipping, fuel, etc.) is higher than in the contiguous 48. This report highlighted the value and importance of subsistence harvest, however the traditional ways of gathering are more difficult with changing weather patterns and climate and increased fuel cost. Farming is starting to subsidize food products from the subsistence traditions; therefore, further education on affordable farming methods and food preparation is a great need. Meter and Goldenberg then evaluated current trends and markets finding that between 2007 and 2014 there was an increase in farms selling directly to consumers (62%), coinciding with an increase of direct sales to consumers (32%). Interestingly according to Meter and Goldenberg, if the total amount of direct sales to consumers was considered a single commodity, it would be equal to the sale of

potatoes, Alaska's 3rd most important product. To encourage local agriculture, the state of Alaska is also providing funding to encourage schools to purchase local food and over \$4 million in USDA funds has been used to build high tunnels to extend the growing season. And lastly, small scale initiatives are the most successful for producers, however they are often limited getting the product to the consumers because of poor infrastructure and lack of processing facilities. Collectively small-scale agriculture is the most successful trend in rural communities on and off the road system. Success is expected to increase due to the use of innovative strategies and tools (i.e. high tunnels or hydroponics) to lengthen the growing season and maximize success in growing local crops.

### c. The Competition

This section compares Tyonek Grown prices by crop to three other types of vendors all on the road system: Fred Meyer, a large chain grocery store; Sun Circle Farms, a small organic farmer; and Arctic Organics, a small non-organic farmer. In addition, many farmers change the price of their product based on the location, for instance Sun Circle Farm has a different price for product sold at the Anchorage Market versus at the Farm Stand in Palmer, Alaska. The price difference is a method to be competitive with other vendors, maximize sales, and it is also a method to recoup participation fees in markets. Direct sales are products sold directly from Tyonek Garden to individual consumers. Indirect sales are larger quantities of products sold to a third party for resale or prepared and served to a consumer such as the local school district.

Crop	Tyonek Grown		Fred Meyer (Chain)	Sun Circle Farm (Palmer)		Arctic Organics (Palmer)
	Non Organic		Non Organic	Organic	Organic	Non Organic
	Direct Sales	Indirect Sales	Indirect	Direct Sales	Indirect	Direct
Beet	\$3.00	\$2.25	NA	\$4.00	\$5.00	\$2.29
Cabbage	\$2.00	\$1.50	\$2.29	\$1.50	\$2.50	\$1.69
Lettuce	\$5.00	\$3.75	\$5.49	\$2.00/head	\$3.00/head	\$5.00
Carrots	\$3.00	\$2.25	\$1.10-\$1.50	\$4.00	\$5.00	\$2.99
Potatoes	\$2.00	\$1.50	\$0.80-\$1.20	\$2.00	\$3.00	\$2.69
Radish	\$3.00	\$2.25	NA	\$3.50	\$4.00	NA
Zucchini	\$2.00	\$1.50	\$1.99	\$2.50	\$3.00	NA
Kohlrabi	\$4.00	\$3.00	NA	\$3.00	\$3.00	\$0.99
Broccoli	\$3.00	\$2.25	\$2.19	\$3.00	\$3.00	NA
Cauliflower	\$3.00	\$2.25	\$2.19	\$3.00	\$3.00	NA

\*All products are priced for AK grown products and prices are per pound unless indicated otherwise.

\*\*Direct sales include products sold to individuals. Indirect sales are to vendors and businesses and priced lower than individual sales to be competitive with other vendors; it is assumed higher quantities of produce will be purchased.

#### **d. Competitive Advantage, Strategic Position, and Opportunities for Collaboration**

The Tyonek Grown Program is in a unique position as it is a rural remote community, but it is fairly close to Anchorage. TTCD has an opportunity to sell products to additional farmer's markets and/or restaurants in Anchorage, as reported by Meter and Goldenberg (2014) the demand does not meet the supply. In addition, TTCD has established a package or brand for Tyonek Garden to include the logo and Tyonek Grown story. This package is a competitive method of marketing, as constituents and customers learn that supporting the Tyonek Grown brand is not only a local farm, but supporting an integrated food system in an Alaska Native community.

#### **e. Community and Stakeholder Support**

Due to the nature of TTCD's work and mission, a close relationship with the community and with other stakeholders is paramount to the success of any project that we undertake. Since formation, TTCD has connected with community members, stakeholders, and partners through the unifying themes of conservation and caring for resources that are important to all.

Community members in Tyonek and in other District communities have shown their support through their eager participation in TTCD Programs. In a 2016 survey, 92% of residents surveyed who responded to the question stated that they believe TTCD is benefiting the community of Tyonek. Local entities in Tyonek, such as the Native Village of Tyonek IRA Council and the Tebughna School, have been closely partnered with TTCD at every stage of our organizational growth. Each of these entities has formally recognized and thanked TTCD for our services.

Local landowners, such as Tyonek Native Corporation (TNC) and Cook Inlet Region Incorporated (CIRI) have worked closely with TTCD in the development of projects and programs that serve the area. Tyonek Native Corporation provided initial financial support to TTCD and has continued to provide support on an annual basis, and CIRI has provided financial support to TTCD for the past three years. Other stakeholders in the District, including Aurora Gas, Hilcorp, PacRim Coal, ConocoPhillips, and Chugach Electric, have supported TTCD by partnering on projects. Many of these entities have provided financial support to TTCD as well.

TTCD has received several awards from statewide organizations. In 2015, TTCD received the Green Star Award for increasing sustainability and reducing waste in the workplace. Also in 2015, TTCD was selected for the Alaska Native Tribal Health Consortium Healthy Portraits success story for the year. In 2016, TTCD was chosen by the Alaska Food Policy Council to receive the Alaska Food Hero Award in recognition of TTCD's efforts to strengthen the Alaska food system.



Several federal agencies have provided support to TTCD, both financially through federal grants as well as through technical assistance. In particular, several agencies within the US Department of Agriculture have supported TTCD financially since the first year of operation. The US Department of Agriculture has further supported TTCD by bringing several national leaders from Washington DC to meet with TTCD staff and to view the TTCD project in Tyonek. These visitors have included USDA NRCS Associate Chief of Conservation Leonard Jordan, USDA Farm to School National Director Deborah Kane, USDA Deputy under Secretary Lanon Baccam, and the Secretary of Agriculture Tom Vilsack.

## **V. Community Outreach and Marketing Plan**

### **a. Current**

TTCD developed a logo for Tyonek Grown Program, to highlight and promote the program. The logo is used on all written material, such as this document, and the website. TTCD uses social media such as Facebook to reach current Tyonek residents, shareholders, and other constituents. TTCD announces local, relevant updates to the Tyonek Grown Program such as the weekly markets, food hub sales in Anchorage, accomplishments, and pictures. In addition, TTCD uses Facebook to honor/showcase staff and interns that work in the garden and their accomplishments. TTCD also has an organizational website with brief descriptions all TTCD programs including Tyonek Grown and houses all newsletters. The semi-annual newsletter announces updates for the Tyonek Grown Program and future events. The newsletter is also mailed/emailed to partners, shareholders, Tyonek community residents, and funders. TTCD also promotes and outreaches to partners, constituents, and funders through presentations at public events, trainings and conferences, and community events. Lastly, Tyonek Garden and the Tyonek story have been shared in newspaper and magazine articles, academic or trade journals, and radio or television news segments.

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.

TTCD provides general training and technical assistance for other rural Alaska communities interested in starting gardening/farming projects. This is completed through various program pamphlets, presentations, videos, community visits, workshops, and online resources. For three years (2015-2017) TTCD organized and hosted three (3) Tyonek Grown Workshops. The workshop was a multi-day hands-on

summer training event for participants from Tribal Conservation Districts and Alaska Native Villages interested in community gardening. Participants came to Tyonek learning hands-on agricultural practices adapted to rural communities, observing and working at the Tyonek Grown operations. TTCD has also assisted rural communities with starting their own farming operations, multi-day hands-on training and technical assistance for other rural Alaska communities interested in starting gardening/farming projects.

## **b. Future**

TTCD will continue to use the logo on marketing products (stickers, mugs, and t-shirts) and educational material produced by the organization. The logo provides a strategic advantage in the local farm movement, as customers recognize “Tyonek Grown” as an Alaska Native, local, and community-driven program. The image allows for customers to develop loyalty to the Tyonek Grown product with long term goals that constituents will seek out and support the program. The logo is reminder that Tyonek is not just a local farm, but it is a community supported effort in a rural Alaska Native Village engaging and providing opportunities for local youth, employing local residents, producing healthy and affordable food, and providing a community gathering space.

In the future, TTCD will use promotional opportunities to educate potential constituents and customers on the importance of the program for the community through the Tyonek Grown story. TTCD, through the Beginning Farmers and Ranchers Program, completed an external evaluation in 2017. The evaluator reported in their findings that the program is reaching its original goal to enhance food availability through Tyonek Garden, as a few Tyonek residents have their own gardens and greenhouses; however, the majority of fresh local produce for community members is from the Tyonek Garden.

TTCD will further provide outreach to include engaging youth and the local school in gardening and production. TTCD will hire students as interns and promote training and education opportunities outside of Tyonek. TTCD will continue outreach through the website, Facebook and other social media, newspapers and magazines, and conferences and trainings. TTCD will expand the partnership with Tebughna School and other partners to offer community classes/workshops in food preservation/storage techniques for garden produce. Lastly, TTCD will work with NVT to increase their capacity to manage the garden and slowly transfer duties of garden operations. Transferring garden management to NVT allows for TTCD to focus on providing education and technical assistance in community gardening and work toward financial sustainability of the garden activities through earned income and non-grant donations.



*Marketing Plan*

Marketing Goals

1. Increase revenue by 15% annually from 2016 to 2021.
2. Develop a business plan integrating education and food production for Tyonek Grown by 2017.
3. Become a leader among Alaska Native and Tribal communities in achieving food security by producing and selling local food.
4. Provide food to Tebughna School lunch and snack program 8 months out of the year by 2020.
5. Advertise and supply to a minimum of 2 restaurants by 2020.

Target Market 1: Tebughna School

Target Market 2: Residents and tribal members in Anchorage and Tyonek

Target Market 3: Small specialty restaurants in Anchorage

Target Market 4: Alaska Native Villages and Tribal Conservation Districts starting agricultural programs

Product

1. Specialty Crops (tomatoes, leafy greens, zucchini, tomatoes, watermelon, green beans, carrots, cabbage, broccoli, cauliflower, squash, radishes, pumpkins, herbs, potatoes, kohlrabi, peas) – TTCD works with Tyonek residents to identify the crops they would like to grow in Tyonek Garden. Due to Tyonek's short growing season and demand from local customers, TTCD focuses on growing specialty crops at the garden. TTCD grows varieties that thrive in Alaska's conditions and is working on improving conservation practices to provide the highest quality product to customers (seed saving, composting, etc.).
2. Promotional Material (education manual, stickers, t-shirts, sweatshirts, coffee cups, tote bags, water bottles) – Tyonek Grown Program is a comprehensive program composed of producing food, educating local residents, and engaging youth in production, marketing, and potential business opportunities. Therefore, TTCD markets promotional products showcasing the "Tyonek Grown" logo.
3. Hydroponic Crops (leafy greens, herbs, tomatoes, peppers, strawberries) – TTCD is partnering with Tebughna School to manage and operate a hydroponic system to produce crops year-round. The current system is capable of producing leafy greens and herbs. Further infrastructure will be required in order to grow crops such as tomatoes, peppers, or cucumbers.
4. Education – With TTCD's experience and knowledge, TTCD provides quality education and outreach on methods to successfully operate a local farm in a rural Alaska Native Village. TTCD utilizes low-cost conservation practices, permaculture, and local materials to grow crops in a cold, arctic climate.

### Price

1. TTCD offers a voucher system for volunteers in the Tyonek Garden. Residents contributing time receive a voucher for a value of \$10 per 5 hours volunteered to use to buy produce.
2. TTCD accepts SNAP and is able to process bridge cards. TTCD accepts payment via SNAP benefits at the local markets.
3. Prices for produce at the market are the following:

Crop	Price/lb.	Crop	Price/lb.	Crop	Price/lb.
Beans	6	Kale	2	Radishes	3
Beets	3	Kohlrabi	4	Rhubarb	2
Broccoli	3	Onions	3	Spinach	6
Cabbage	2	Peas	6	Summer Squash (Zucchini)	2
Carrots	3	Peppers	6	Tomatoes	5
Cauliflower	3	Potatoes	2	Winter Squash	2
Celery	2	Lettuce	5	Swiss Chard	5
Green Beans	6	Herbs	10	Watermelon	5

### Place

1. TTCD hosts weekly community markets in Tyonek from July – September, and in Anchorage from July - October. The markets in Tyonek are at the Tyonek Garden, and the markets in Anchorage are in the Tyonek Tribal Conservation District offices.
2. TTCD currently sells produce out of a fridge located at the Native Village of Tyonek Tribal Office. Tyonek residents purchasing food complete the transaction with NVT staff or TTCD staff when available.
3. With year-round production via hydroponics, TTCD will primarily sell produce to Tebughna School to serve in the school lunches and during snack. TTCD will then explore the following options with excess produce: sell produce at the school store, Tribal Center, TTCD Anchorage offices, and at restaurants in Anchorage.
4. Anchorage Food Hub: TTCD is participating in the food hub to sell local produce to partners and constituents in Anchorage. Individuals in Anchorage purchase produce online via the hub based on what is available during a given time at a selected quantity. Once orders are processed, the exact quantities of purchased goods are harvested and then dropped off by TTCD staff at the community center where the buyers pick up their produce.

### Promotional Strategy

1. Youth involvement – TTCD involves youth in all stages of the gardening process through the Tyonek Grown Program. Students at the Tebughna School plant and care for vegetable starts, transplant vegetable starts, care for plants as both

volunteers and through a paid youth internship program, and harvest produce in the fall. Youth involvement is not only part of the operational strategy but also the promotional strategy for this program, as many customers are interested in supporting this component of the Tyonek Grown Program.

2. Website – TTCD advertises products and the Tyonek Grown Program on the organizational website and partner websites (NRCS, ANTHC, Alaska Food Policy, Alaska Grown Handbook).
3. Social Media – TTCD provides updates and announcements on a Facebook account. “Friends” and partners on social media have the opportunity to showcase these posts, increasing the audience.
4. Local Newspaper and Featured Articles – TTCD received the Alaska Food Hero Award from the Alaska Food Policy Council recognizing their achievements and efforts in strengthening the local food system. ANTHC highlighted the Tyonek Garden as their 2015 Healthy Portraits project and advertised the program on their website and in a statewide publication. An article on TTCD was featured for both of these organizations. The Tyonek Garden has been showcased in 4 other newspaper articles in 2014 and 2015, helping advertise products and local potato sales. TTCD will continue to utilize opportunities to showcase the Tyonek Grown Program in local newspapers and partner publications (i.e. UAA, Alaska Dispatch News, UAA Extension).
5. Conferences and Presentations – TTCD shares information about the Tyonek Grown Program at state and national conferences through promotional booths as well as presentations.
6. Technical Assistance - TTCD promotes the story of the Tyonek Garden to other rural Alaskan communities to inspire other projects and to build a network of rural Alaskan growers. TTCD hosted week-long classes for three summers and is now continuing this work through partnerships with agricultural organizations and conferences, creating outreach materials to be shared on social media, and through simple technical assistance to rural communities in need of guidance.
7. Word-of-mouth – Tyonek is a small community and Alaska has a small population in comparison to states in the contiguous United States. Word-of-Mouth is important and effective method of marketing. Relationships with partners is vital to getting the word out and informing constituents on the Tyonek Grown Program.
8. Flyers and newsletters – TTCD advertises in their quarterly newsletters updates for the programs and dates and times of the markets. In addition, TTCD hands out flyers and announcements door-to-door in Tyonek.

## VI. Sustainable Human Resources Plan

### a. Current Personnel

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 supervisor in 2016 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, manages garden staff, 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, TTCD Program Assistant provides assistance as needed on many aspects of the program, and particularly with tracking sales.
- John Hagan, TTCD Conservation Technician provides assistance as needed.
- 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. Gwen supervises interns and oversees day to day operations.
- Up to six summer youth interns
- Garden Volunteers
- Tebughna School students: The student body at the Tebughna School represent a significant workforce for the Tyonek Grown Program through their involvement in many key aspects of the Tyonek Garden.

### b. Projected Personnel Needs

Over time, TTCD plans to 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. This means that ideally, the personnel needs will reduce at TTCD and increase at NVT. When this goal has been achieved, Tyonek Grown will continue to be staffed by:

- TTCD Conservation Director directs the Tyonek Grown program and provides technical assistance at the Tyonek Garden.

- 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
- TTCD Program Assistant provides assistance to Conservation Director and Executive Director as well as technical assistance to NVT as needed.

However, the day to day tasks of managing the Tyonek Garden will be implemented by NVT. This means that NVT would hire the following positions, who would be supported by technical assistance provided by TTCD:

- Tyonek Grown Garden Manager
- Four summer youth interns

TTCD will work with NVT to incrementally increase the role of NVT in Tyonek Garden management over time.

#### Recruitment Plan

TTCD recruits student interns by working closely with the Tebughna School and share information about the program and job opportunities with Tyonek tribal members and Tyonek Native Corporation shareholders. Recruiting for these intern positions is completed annually in the spring.

#### Training Needs

Currently, TTCD's Conservation Director Nicole Swenson trains all Tyonek based staff, including the Garden Supervisor and youth interns, on an annual basis through an orientation and throughout the growing season. On the job training covers transplanting, nutrient management, irrigation management, crop rotation, food safety, and many other topics.

In order to improve the success and sustainability of the Tyonek Grown Program, TTCD has identified current training needs to improve efficiency at the Tyonek Garden. More vegetable production and reduced waste can be achieved through more efficient garden management methods. Future efforts will focus on training Tyonek based staff to increase efficiency.

#### Compensation and Incentives

Compensation for TTCD employees is based on education and experience. TTCD provides other incentives for staff, including medical, vision, and life insurance, holidays, sick leave, and annual leave. Raises for employees are discussed at each annual evaluation. Youth interns also have the ability to earn school credit for their internship with TTCD.

### Staff Evaluation Plan

New employees are evaluated after 90 days (3 months). After that, all employees are evaluated on an annual basis. Evaluations are goal-oriented, and are not only a time to reflect on the previous year but to look forward and set goals for the next year.

### Retention Plan

TTCD is dedicated to providing a positive work environment to retain excellent employees. In addition to competitive salaries and generous benefits, TTCD provides the following incentives to employees:

- Flexible work schedules: Employees are given flexibility on their daily start and end times (start times between 7 and 9, end times between 3:30 and 5:30) to better fit their individual schedules. Employees also have the option to work four ten hour days instead of five eight hour days, particularly during the field season. Hours for youth interns can be shifted if needed to accommodate other commitments.
- Working remotely: Employees have the option to work from home using laptops.
- Standing desk stations: All employees have workstations that can switch between a seated desk and a standing desk.

### Leadership Succession Plan

TTCD will work with NVT over the next several years to prepare them to take the lead in Tyonek 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.

As TTCD Conservation Director Nicole Swenson continues to train youth interns each summer and all Tebughna School students throughout the year, it is our hope that we are growing the future leaders of this program by instilling important skills at an early age.

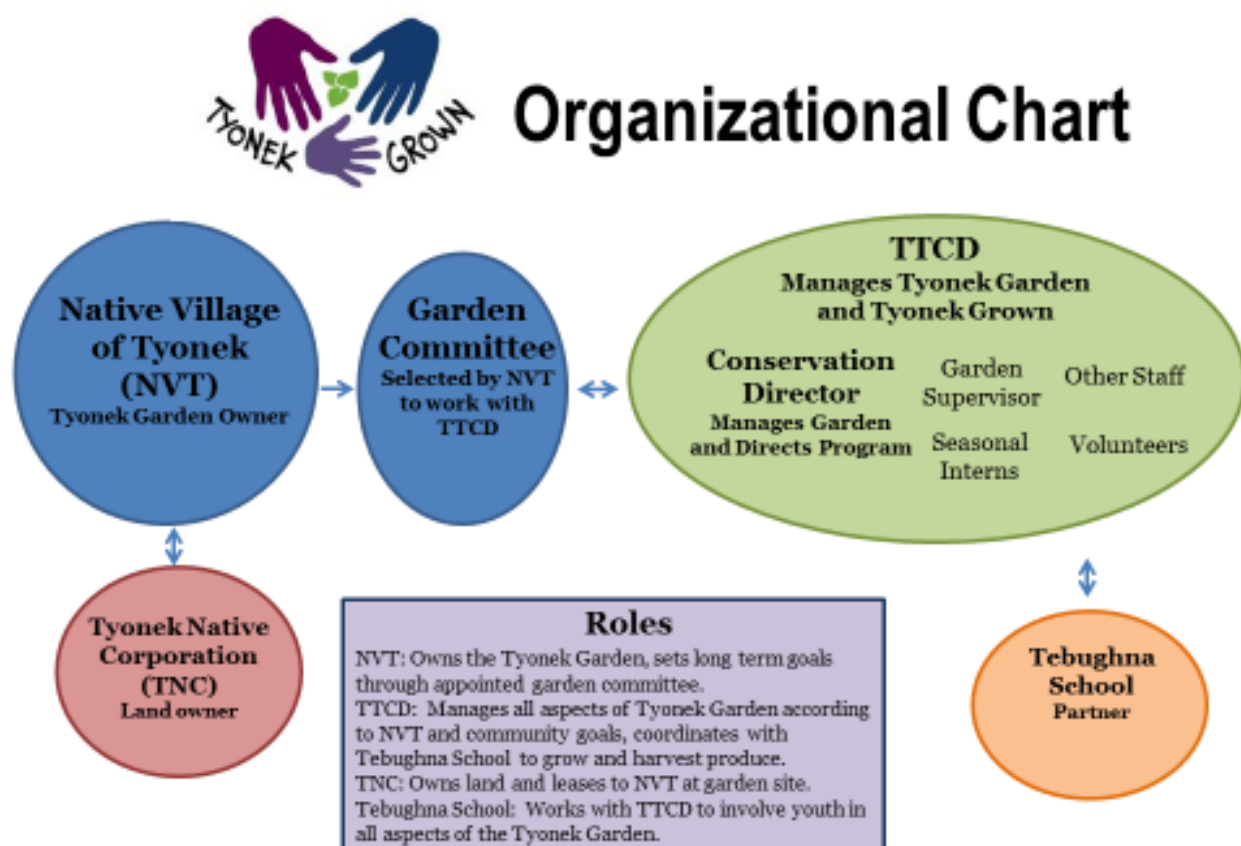
### Volunteers Utilization and Management

Volunteers are encouraged to assist with the Tyonek Garden, and given the opportunity to earn produce points towards Tyonek Grown produce. From 2015-17, 14 individuals volunteered at the Tyonek Garden with a total of 156 recorded volunteer hours.

## VII. Governance and Executive Leadership

### a. Organizational Chart

The figure below portrays the Tyonek Grown program's organizational chart.



The Tyonek Grown program represents a partnership between several entities. The Tyonek Garden sits on land that is owned by the Tyonek Native Corporation (TNC), and leased to the Native Village of Tyonek (NVT). NVT owns the Tyonek Garden and guided by community input has set long term goals for this project. NVT has appointed a Tyonek Garden Committee that works directly with TTCD. TTCD is the managing entity for the Tyonek Garden and the Tyonek Grown program, and manages the garden according to NVT goals. TTCD coordinates with the Tebughna School to involve youth in all aspects of the Tyonek Garden. The TNC leasing document and the TTCD/NVT Tyonek Garden Agreement are included in the appendix of this document.

Tyonek Grown is a TTCD program. To learn more about TTCD's governance and organizational structure, see the TTCD Business Plan.



## **b. Governance Board**

The TTCD Board of Directors governs the organization, and supports TTCD's mission by appointing and evaluating the Executive Director, establishing strategic direction, setting broad policy, and stewarding TTCD's assets. The board meets five times a year.

Tyonek Garden Committee is a group of 3-6 individuals selected by the Native Village of Tyonek IRA Council to work directly with TTCD to set the long-term goals for the Tyonek Garden. The Tyonek Garden Committee consists of the following members as of 2017:

**Cassandra Kroto:** Cassandra currently serves as the Tribal Administrator for Native Village of Tyonek (2017), and is a longtime supporter of the Tyonek Garden.

**Justin Trenton:** Justin is the NVT Environmental Department Director, and has worked closely with TTCD to provide vegetable sales daily in the Tyonek Tribal Center since 2016.

**Gwen Chickalusion:** Gwen currently serves as a NVT Council Member and serves on the TTCD Board of Directors. Gwen was recognized in 2015 as TTCD's Volunteer of the Year for her extensive service in the Tyonek Garden. Through her role at the Tebughna School as the cafeteria manager, Gwen has incorporated 85 lbs. of fresh vegetables into the school snack program. Starting in 2016, Gwen was hired by TTCD as the Garden Supervisor, a permanent seasonal position.

**Marian King:** Marian currently serves as a NVT Council Member and serves on the TTCD Board of Directors as Vice-Chair. Through her role as the Community Health Representative for Tyonek, Marian is eager to incorporate healthy food options into the community.

## **c. Key Management and Decision Makers**

**Conservation Director** - Nicole Swenson - TTCD serves as the Tyonek Garden Manager and directs the Tyonek Grown Program. Nicole has a Bachelor's degree in Biology from the University of Montana and a Master's of Science degree in Natural Resource Management from the University of Alaska, Fairbanks. Nicole's master's degree focused on how climate change may affect agriculture in Alaska using climate models to look at season extension and soil temperatures. Nicole took numerous college-level, hands-on courses in agriculture while obtaining her bachelor's degree in Montana. Once back in Alaska, she became an Alaskan Master Gardener, co-founded the University of Alaska, Fairbanks community garden, designed and taught agriculture classes to youth, and managed a school garden and market stand for Calypso Farm and Ecology Center. Nicole works closely with the Tyonek Garden Committee to implement



long-term goals and manages and trains all garden staff including the Garden Supervisor and seasonal Garden Interns.

**Executive Director** - Christy Cincotta - Christy earned a B.S. degree in Biology from Providence College in 2004 and a M.S. degree in Biology with a focus in Ecology from Rutgers University in 2006. Christy became a Certified Conservation Planner with USDA Natural Resources Conservation Service in 2011 in the state of Washington. In 2014, Christy received a Certificate in Nonprofit Management from the Foraker Group and the University of Alaska, Fairbanks. In her role as Executive Director, Christy provides administrative and financial oversight for the organization, manages staff, works with contractors, and collaborates with the Board of Directors to execute board decisions.

#### **d. Professional Consulting and Support Services**

TTCD contracts several support services, in order to allow staff to focus more time and resources on TTCD's mission. The following services are currently outsourced:

**Financial services** – TTCD contracts Innovative Funding to provide financial services, including bookkeeping, payroll, payroll tax services, accounts payable, accounts receivable, and financial reporting. Innovative Funding also assists the Executive Director with budget preparation and planning.

**Innovative Funding** - Grant Writing and Grant Management – Erin Hoffman, owner of Innovative Funding, has worked with TTCD since September, 2011 and has assisted with program development, securing funding, and grant management. Erin has a Masters in Social Work (MSW) in Non-Profit Management from the University of Michigan in Ann Arbor, Michigan, the number one program in the nation. She is experienced in technical writing, research, program evaluation, and bookkeeping.

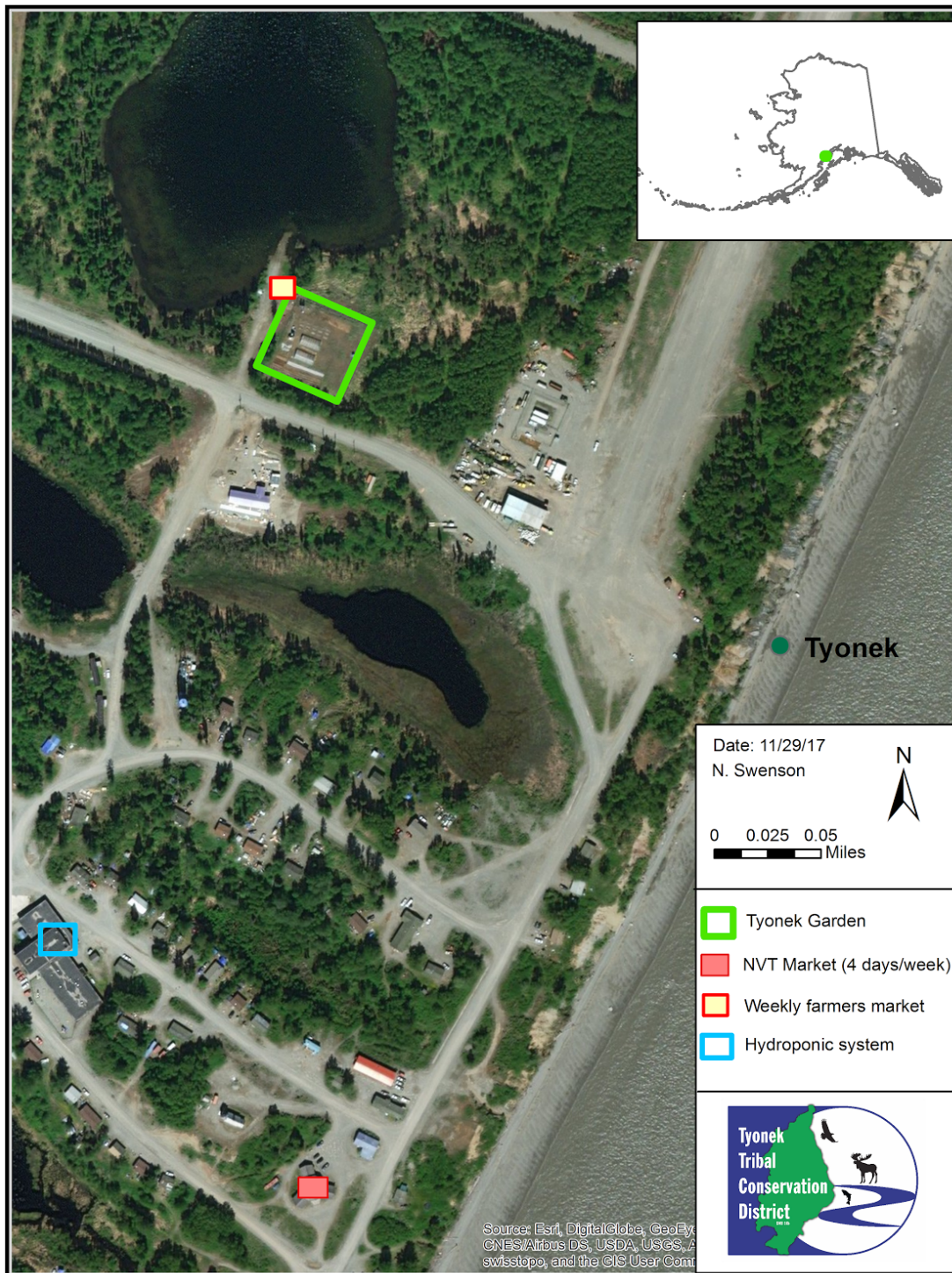
## **VIII. Facility Operations Plan**

The Tyonek Garden is located on Pumphouse Rd. Tyonek, Alaska 99682. The garden facility is the only operation on Pumphouse Road as the road ends directly after the garden at Spring Lake. Geographic Location: 61.072408N 151.140031W

TTCD's hydroponics system is located within the Tebughna school in room number 11. The hydroponics system takes up approximately one quarter of the space in the classroom and the remainder of the space is used for science activities and storage for the school.

TTCD's headquarter offices are in the historic Kaloa Buildings located at 1689 C St. Suite 219 in Anchorage, Alaska. The offices are located on the first floor, and include suites 148 (staff offices) and suite 145 (conference room). See TTCD business plan for more details on the specifics of lease agreements and costs of the office spaces.

## Tyonek Grown Production and Market Locations



**Figure 1:** The physical location of the Tyonek Garden and two markets that are offered in the summer in Tyonek.

## **a. Facilities Description**

The garden is a space for growing and selling food, providing education, and hosting community celebrations. The land has been cleared of forest and was leveled for gardening purposes in 2009. From April to October gardening activities take place in rows directly in the soil, raised beds, and high tunnels. There are 5 small permanent structures on the property for gardening purposes and the structures are not intended for office use or inhabitancy.

The garden perimeter is delineated by a fence that encloses approximately 200x200ft or 40,000ft<sup>2</sup> of potential growing space. The space currently being utilized for gardening activities also includes land outside of the fenced perimeter for irrigation lines, an outhouse, and two sheds. This brings the acreage of land in use to approximately 1.5 acres of land.

### Ownership

The Tyonek Native Corporation (TNC) is the landowner of the 1.5 acres on which garden activities occur. The Native Village of Tyonek (NVT) received a Recreational Land Use Permit from TNC in May of 2012 to legally use the garden site until renewal in 2017. The Tyonek Tribal Conservation District (TTCD) has a written agreement with NVT to manage garden activities and access this land on a regular basis.

### Existing Infrastructure Details

<b>Item</b>	<b>Model</b>	<b>Specifications</b>	<b>Notes</b>
<b>Battery Shed</b>		6'x6' shed, secure exterior door, metal roofing	NVT owned
<b>Barn Shed</b>		12' x 16' barn with double doors and loft; constructed by Don with Alaska Portable Buildings in 2015	TTCD owned
<b>Tool Shed</b>		10' x 10'	Ownership unknown
<b>Outhouse</b>		4' x 6' outhouse	
<b>High Tunnels (2)</b>		48' x 22', metal and lumber frame, poly film cover	NVT – NRCS EQIP contract ending 2017
<b>High Tunnel (1)</b>		10' x 20', PVC and lumber, poly film cover	
<b>Ventilation Fans</b>	Dayton: 10W194	Thermostat controlled, Grainger Industrial Supply	Periodic replacement of motors have been required
<b>Solar arrays (8)</b>	Prefer Solar 250M; 250W 24V	Ventilation and battery shed panels; The total potential for the arrays is 135.4 amps.	With the two MPPT controllers, 1920 watts can be controlled; 96% of the total potential power.

***Tyonek Grown: A Business Plan for Sustainability December, 2017***

<b>Item</b>	<b>Model</b>	<b>Specifications</b>	<b>Notes</b>
<b>Batteries (6)</b>	2V, 1590A	12V system	
<b>Buried Wire</b>	Direct Burial 10/3	Stranded wire, 10 gauge, arrays to battery shed	Replaced old wire in 2014-15
<b>Inverter</b>	Magnum Energy: XW-MPPT60-150	Magna Sine Magnum Energy, Tracking solar charge controller	
<b>MPPT Controllers</b>	Schneider Electric, Xantrex XW MPPT 60-150 UL/CSA/CE		Installed in 2013
	MN150 MPPT Classic Lite 150VDC/96A BTS	No LCD screen	Installed in 2015 (Renewable Energy System installed after discovering a design mistake from 2013)
<b>Generator</b>	Honda EU2000i	120V AC output, 12V DC output, 0.95-gal tank, 3.4 hour run time	
<b>Tractor</b>	Grillo G85D	9Hp Honda gas engine, Recoil start, 4 x 10 x 18 adjustable rim wheels	Purchased in 2015
<b>Tiller</b>	Grillo 27" Tiller with splined PTO	Fits 8-14hp Grillo (G85 8hp - G110); Width Weight: 95 lbs.	Purchased in 2015
<b>Chipper Shredder</b>	Caravaggi BIO 80	Chipper/Shredder for Grillo models G85-G107	Purchased in 2015
<b>Flail Mower</b>	Berta Franco 26" Flail Mower for Grillo G85D/G107 w/ Integral Quick Coupling Tang	Attachment for G85D Tractor to manage cover crops and weeds	Purchased in 2017
<b>Bed Shaper</b>	Mini-bedshaper (32" wide beds max) w/ Disk Hillers & Drag Chain	Mini-bedshaper (32" wide beds max) w/ Disk Hillers & Drag Chain (requires AT-30-ET tool carrier & drawbar);	Purchased in 2017
<b>Water Tanks (2)</b>	500 gallon	Polywater, 62" x 45", Greer Tanks	White in 2012, black in 2015



<b>Item</b>	<b>Model</b>	<b>Specifications</b>	<b>Notes</b>
<b>Solar water pump</b>	Advanced Power 12-40 VDC Power Clean Water Submersible Pump	180 W 40 V DC, 200 feet (61 meters) Maximum head (lift), 50 feet (30.5 meters) Maximum submergence; about 2.5 gallons per minute	Purchased through Robison Solar Systems in 2012, repairs completed in 2016
<b>Solar Arrays (3) (Water Pump)</b>	Robison Solar Systems: 538524	Max Power 85W, Operating Voltage 34.4V, Operating Current 2.47A, Open Circuit Voltage 43.2, Short Circuit Current 2.65 A	
<b>Float Switch</b>	Advanced Power ALC 1275	Replaced in 2016	
<b>Main line</b>	Dripworks 1.5" oval hosing	Mainline irrigation, Flow rate: 37 GPM (2,220 GPH); Max Pressure: 21 PSI	Installed in 2015, expected durability of 7+ years
<b>Main Line Fittings</b>		1.5" ball valves, barbed connections, etc., Dripworks, local hardware establishments	Installed in 2015
<b>High Tunnel Mainline</b>	¾" Polyethylene Mainline Tubing	Dripworks; Size: 0.830" ID x 0.940" OD; Max. Pressure: 50 PSI; Max. Flow: 480 GPH (8 GPM); Fittings: ¾" Easy Loc, Compression or Barbed fittings	Installed in 2015
<b>Drip Line</b>	Toro Aqua-traxx 15 mil – 8" OC – High Flow	Dripworks; Pressure Range: 4-15 PSI; Filtration Requirements: Minimum 155 mesh recommended; Installation: Blue Stripe Up	Annual installation of drip line, expected reuse of 5 years
<b>Polyethylene Tank for hydroponics</b>	150 gallons	27 1/3" height/49 1/2" height/ 37" width/ 60 lbs.; 1.5inch opening at bottom	
<b>BlueLab Dosertronic Peridoser Kit</b>	Automatic water sampler and doser for hydroponic unit	Doser, 3 pumps, EC, Temp, and pH sensors, calibration and maintenance kit	
<b>Hydroponics Trays</b>		10, 10ft hydroponic trays, 14 1-inch <sup>3</sup> openings in each tray	Donated by Urban Greens in 2016
<b>Hydroponics Shelves</b>	Custom built by Alaska Steel	10ft x 6ft, two shelves, material is 1 inch x 1 inch hollow aluminum, cross bars from Lowes	

Item	Model	Specifications	Notes
<b>LED Hydroponic Lights</b>	Philips Green Power 2.0	Purchased at Hort America's, 16 approximately 3 ft. long	

#### Improvements to Property

All structures on the property were constructed for gardening purposes and have added approximately \$65,000 of value to the property. All structures were paid for with grant funds and most are the property of NVT. One large shed is TTCD owned and can be removed if necessary in future management schemes.

An important land management goal is to improve soil fertility through time. The annual additions of organic soil amendments, planned nutrient management, careful soil tillage, and efficient irrigation are significantly improving the property as agricultural land.

TNC is not expected to reimburse TTCD or NVT for these structures or improvements. These expenses were paid for by grant and donation funds, and therefore their cost does not require reimbursement for any of the involved organizations.

#### ADA

The property and structures are not in compliance with the Americans with Disabilities Act and there is no current timeline to update the property and its structures to be in compliance. The compliance of this property does not inhibit a person with disabilities from working for any of the involved organizations as office headquarters are located in separate locations and are all ADA compliant.

## **b. Future Infrastructure List**

#### Infrastructure Needs

The Tyonek Garden needs to improve its food safety protocol during harvest by constructing a covered, open-air, harvest/wash station. This is planned to be a simple structure with utility sinks and tables for harvesting, sorting, washing, and bagging. Once the garden is given approval for these improvements by the NVT Council and Garden Committee, treated water will be plumbed into the wash station via the city water system. These improvements will exponentially improve the garden's ability to process produce in a safe and efficient manner.

Maintenance for these facilities and soil come at an annual cost. Maintenance costs estimates are outlined below. Estimates were made based on management experience over the first 6 years of operation. Some costs will decrease or increase over time as soil and infrastructure needs change. Periodic or catastrophic costs are estimated in 3 or 5 year increments based on their likelihood or schedule. These costs are then distributed proportionally over the 3 or 5 years to build room in the annual budget for these maintenance costs over time.

## c. Operations Maintenance: Facilities

### Infrastructure

	Cost	Frequency
<b>Tractor Maintenance</b>		
Engine Oil	16	Annually
Transmission Oil	7	Annually
Gasoline	50	Annually
Gas Stabilizer	10	Annually
Cable Lubricant	7	Every 3 years
<b>Battery Maintenance</b>		
Distilled Water	8	Annually
Refractometer	45	Replacement Cost
Inverter Maintenance <sup>1</sup>	1,000	Every 3 years
<b>Solar Panel Maintenance</b>		
Cleaning Products	100	Every 5 years
Occasional maintenance fuses, connections, etc.	100	Every 3 years
<b>Irrigation Maintenance</b>		
Float switch maintenance/ replacement	60	Every 3 years
Drip line replacement/leak mend fittings	25	Annually
Replacement of damaged main line and fittings	50	Annually
Filter replacements or additions	200	Every 5 years
Tank cleaning materials	50	Annually
Painting/maintaining white tank (algae maintenance)	50	Annually
<b>High Tunnel Maintenance</b>		
Ventilation fan/electrical maintenance	300	Every 3 years
Vertical fans solar stand replacement/maintenance	50	Every 5 years
Poly film mending or replacement (plastic, screws, wiggle wire, etc.)	300	Every 5 years
Lumber replacement	50	Every 3 years
Stake replacement	50	Every 5 years
Snow removal equipment	50	Annually
<b>Fence Maintenance</b>		
Gate replacement or fence post repair	200	Every 3 years
<b>Shed Maintenance</b>		
Replacement locks	100	Annually
Leveling and maintaining floorboards and stairs	50	Annually
Shelving improvements and repair	100	Annually

<sup>1</sup> Most technical assistance received over the phone, but there is potential electrician visit in the future.

	Cost	Frequency
<b>Pest Control</b>		
Rover cover	50	Every 5 years
Yellow jacket control	50	Annually
Mice control	150	Annually
Paint/Stain siding maintenance	150	Every 3 years
<b>Outhouse Maintenance</b>		
Move ever few years	500	Every 5 years
Toilet paper	50	Annually
Paint/stain	50	Every 5 years
<b>Tools</b>		
Replacement tools	300	Annually
Tool Repairs	100	Annually
<b>Soils</b>		
Organic matter (compost) <sup>2</sup>	4,000	Annually
N additions	200	Annually
P additions	200	Annually
K additions	50	Annually
Liquid fertilizers	100	Annually
<b>Hydroponics</b>		
Seeds and fertilizer	150	Annually
Tubing and fittings	100	Annually
Rock wool	350	Every 5 years

Annual total: \$5,916

Every 3 yrs.: \$1,867

Every 5 years: \$1,695

Annual maintenance cost of \$6,971 =  $[6016 + (0.2 \times 1345) + (0.33 \times 1867)]$

### Tyonek Grown Crop Rotation Plan

The Tyonek Garden crop rotation plan is completed every three years and aims to reduce pest and disease risk and optimize soil health and productivity. The following section outlines the goals of crop rotation and visually displays past and future crop rotation plans (Figure 2, Figure 3, and Figure 4). Another goal of this crop rotation plan is to incrementally increase the amount of land available for production within the fenced garden area. Every other year another quadrant of the easternmost field is placed into production to increase the capacity for growth and crop rotation options. The following maps aim to achieve the following outlined goals and principles.

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<sup>2</sup> Decrease Annually



### Goals

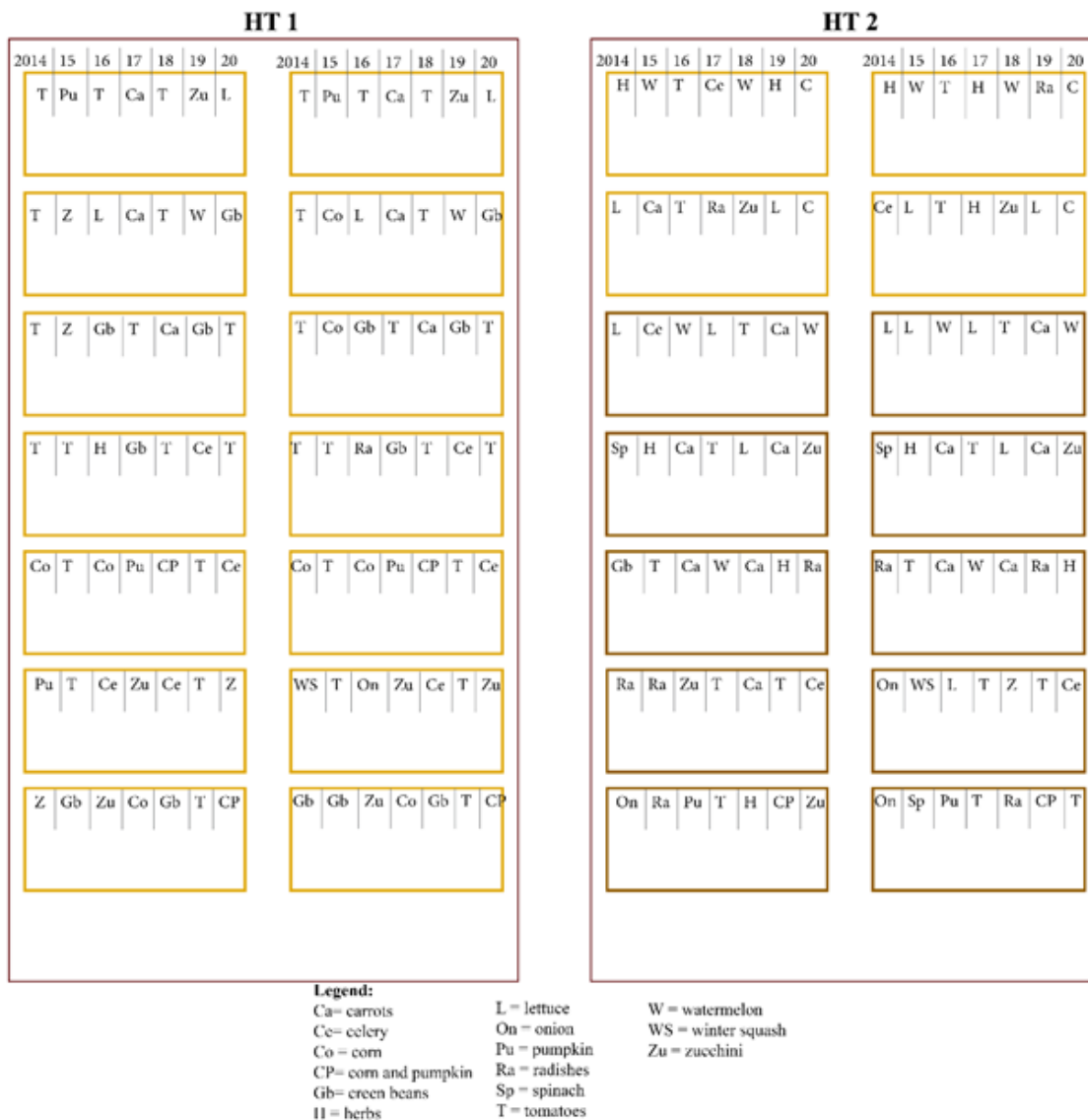
- Manage for pests and disease
  - Root maggots, aphids, leaf miners, and potato diseases are main priorities
- Manage for maximum productivity
- Manage for sustainable soil health and nutrient availability
- Minimize labor
- Minimize inputs and resource use
- Manage for maximized local resource based nutrient management

### Basic principles for crop rotation plan

- Avoid known crop rotation disease issues; i.e. avoid planting within the same family and avoid planting the same species in the same place in subsequent years.
- Gather data throughout the season (pest, disease) and respond immediately with the organic methods available and crop rotation methods in the following season
- Maintain a variety of crops in each field or growing space whenever possible
- Utilize cover crops as often as possible
- Alternate deep rooted crops with shallow, fibrous root systems
- Precede heavy feeding crops with nitrogen fixing crops
- Avoid planting the same crop family in the same field too often
- Weed susceptible crops should be followed by a weed suppressing crop



## High Tunnel Crop Rotation 2014-2020



**Figure 3:** Crop rotation plan for each raised bed in each high tunnel. Each column represents a year of production and the crop abbreviations are described in the legend.

## Outdoor Raised Bed Crop Rotation 2014-2020

2014	15	16	17	18	19	20	14	15	16	17	18	19	20	14	15	16	17	18	19	20	14	15	16	17	18	19	20
		Br	Bt	Zu	Ka	Zu			Zu	Bt	Ka	Zu	LPl			Zu	Lpl	Ka	On	Lpl			Br	L	On	Ka	Lpl

	Br	F	Bpb	Zu	Ko		L	Br	Lpl	Bt	Zu		On	H	Bpb	Zu	Ko		Gb	Br	Lpl	Bt	Zu		Bt	Br	Bpb	Zu	Ko

	Lpl	Zu	Ka	Lpl	On	St	St	St	St	St	Ca	Ca		Br	On	Bt	Lpl	On		Lpl	L	On	Lpl	H		Bt	Br	Zu	Lpl	Ka

**Legend:**

Bpb = Beets, lettuce, beets (rowed intercropping)	L = lettuce	W = watermelon
Ca = carrots	Lpl = Lettuce, Peas, Lettuce	WS = winter squash
Ce = celery	On = onion	Zu = zucchini
Co = corn	Pu = pumpkin	
CP = corn and pumpkin	Ra = radishes	
Gb = green beans	Sp = spinach	
H = herbs	St = Strawberries	
Ka = Kale	T = tomatoes	
Ko = Kohlrabi		

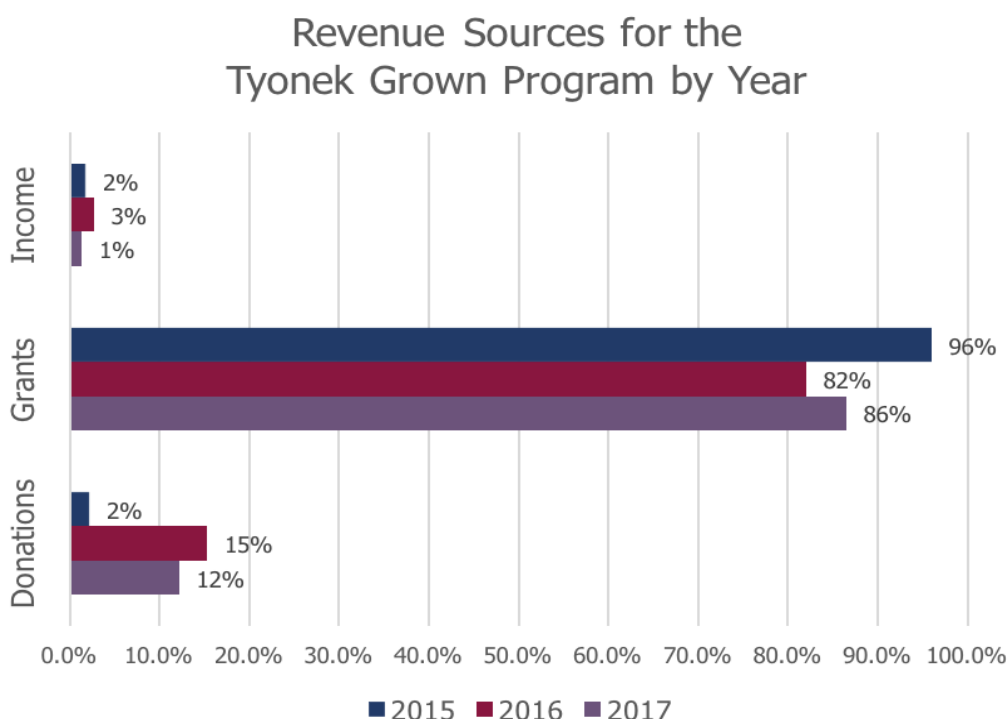
**Figure 4:** The crop rotation plan for the outdoor raised beds in the Tyonek Garden. Each column represents a year and the crop abbreviations are described in the legend.

## IX. Sustainable Income Plan

### a. The Current Revenue Picture

Current revenue sources tracked by TTCD include federal and state grants, donations from individuals and corporations, and income earned from contracts, workshops, and selling produce. The following chart shows revenue sources for the years 2015, 2016, and 2017. The revenue documented for the 2017 is tracked up to November 30, 2017.

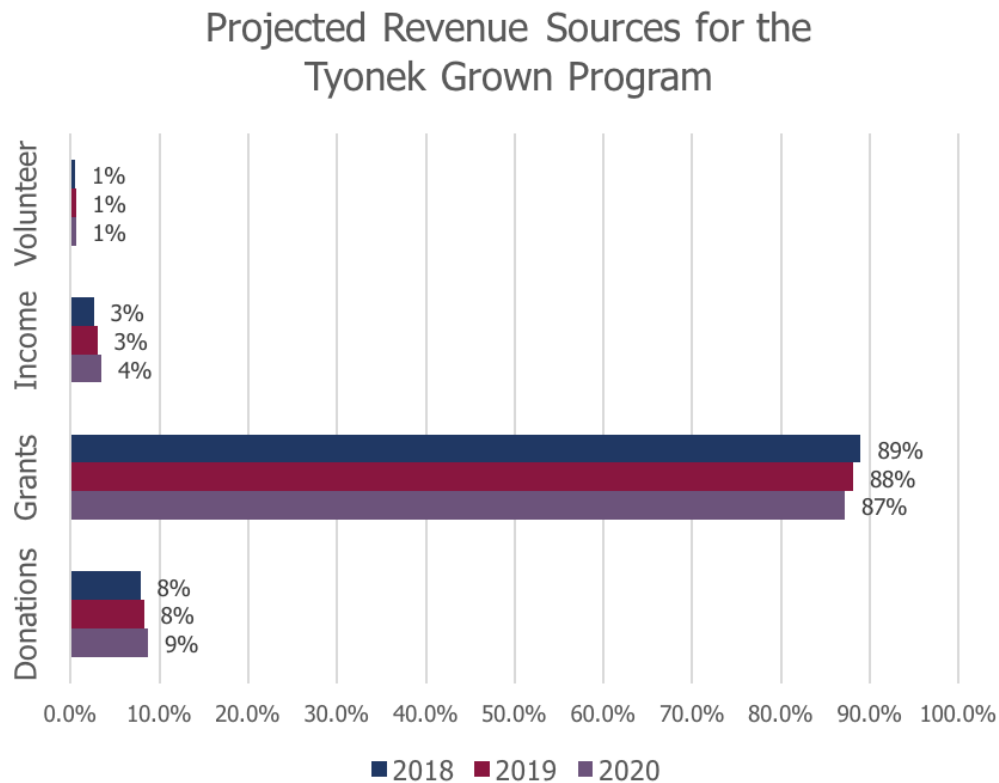
Currently, the majority of the program is supported through state, federal, and non-federal grants including a five-year grant with USDA Natural Resource Conservation Service Regional Conservation Partnership Program (RCPP) to support garden operations and development until June 2020.



### b. The Proposed/Desired Revenue Mix

In the future, TTCD plans to increase earned income and donations. While TTCD understands that grants are not a sustainable source of funding, they are important for supporting future projects. TTCD will also work to increase revenue by selling produce from the hydroponics system to the school and outside markets, as well as continue support from the USDA RCPP program until June 2020. TTCD is cognizant that with

increased production there are increases in costs, therefore, they are cautious of increasing production too quickly. As TTCD increases donations to support the Tyonek Grown Program in future years, these donations will be used to leverage federal, state, and local funding. Long term within five years, TTCD plans to increase income to support the interns working in the garden.



## X. The Financials

### a. Profit and Loss Actual Expense

TTCD uses a double-entry bookkeeping system in QuickBooks Enterprise. TTCD processes payroll internally and records each transaction by program. The accounting system and TTCD's capacity has developed since 2013 to increase capacity to record revenue and expenses by program, track accounts payable and billable expenses, record donations and earned income, and complete payroll internally. In fiscal year 2015, TTCD expended more than \$750,000 in federal funding, completing its first successful A-133 audit.

The chart below shows expense and revenue for 2015, 2016, and 2017. This report was completed in December 2017; therefore, the financials in this report for 2017 are reflected as of November 2017. TTCD received non-federal funding from corporations and foundations, which are received quarterly or in one allotment, rather than reimbursable. The payments are recorded in one fiscal year but may carry over to subsequent years, thus showing a deficit for those years. For instance, in 2015, TTCD received grants from the Rasmuson Foundation and CIRI corporation, recording the payments in 2015; these payments covered 2016 expenses, yet 2016 shows a deficit in net income as the payment was in 2015. In addition, TTCD did not track volunteer time in the accounting system as an in-kind value. This will be changed in 2018 so that this value can be recognized by the organization and leverage future funding.

	Actuals for Tyonek Grown Program			
	2015	2016	2017	
Income				
Grants/Contracts	\$215,393.30	\$136,356.01	\$213,672.42	
Donations	\$5,000.00	\$25,444.26	\$30,082.21	
Earned Income	\$4,045.23	\$4,477.00	\$3,357.87	
Volunteer Time	\$-	\$-	\$-	
Total Income	\$224,438.53	\$166,277.27	\$247,112.50	
Expense				
Admin	\$30.00	\$36.30	\$105.44	
Personnel	\$70,702.50	\$79,198.58	\$101,558.87	
Fringe	\$16,472.84	\$20,631.07	\$28,172.12	
Supplies	\$20,382.15	\$17,885.96	\$10,179.45	
Travel	\$35,707.20	\$35,509.42	\$33,684.04	
Contractual	\$63,795.73	\$44,958.33	\$75,014.58	
Total Expense	\$207,090.42	\$198,219.66	\$248,714.50	
Net Income	\$17,348.11	\$(31,942.39)	\$(1,602.00)	\$(16,196.28)

\*Negative Balance shows that cash reserves from previous years paid for expenses.

2015: 7 interns    2016: 4 interns    2017: 1 Garden Manager & 4 Interns



### Revenue (Income)

The Grants/Contract line item includes grants and cooperative agreements from federal and state agencies (i.e. United State Department of Agriculture) and non-federal agencies (i.e. First Nations Development Institute, Rasmuson Foundation, ConocoPhillips, Tebughna Foundation, & Alaska Conservation Foundation). Donation line item includes corporate and individuals cash donations such as Tyonek Tribal Corporation and CIRI. Earned income line item includes revenue from the sales of produce at the markets, at the NVT tribal center, and registration for the Tyonek Grown Workshops.

### Expenses

TTCD tracks currently six major subcategories: Administration, Personnel, Fringe, Supplies, Travel, and Contractual. Administration includes fees and subscriptions, rent, and insurance. Personnel is the hourly and salary wage of all TTCD staff. Since 2015, TTCD has increased the number of full time and seasonal employees including the number of Tyonek residents and youth hired to work in the Garden. In 2015, TTCD employed 7 seasonal interns. In 2016, TTCD employed 4 seasonal interns. During 2016, TTCD's Conservation Director was on maternity leave, therefore, there was a decrease in capacity to hire, train, and manage seasonal staff. In 2017, TTCD employed 1 part time Garden Manager and 4 seasonal interns. The seasonal interns and Garden manager are all Tyonek residents living in the village. Fringe expenses include health and retirement benefits for full time staff and company payroll taxes. Supplies are materials for education, outreach, and the garden operations. Travel includes costs back and forth to Tyonek from Anchorage and travel assistance for participants to travel to the Tyonek Grown Workshops from their village. Lastly, Contractual expenses include time for the Grants Manager/Bookkeeper, Innovative Funding and Alaska Tribal Conservation Alliance, subcontracted for completing outreach and education to other Tribal Conservation Districts. Contractual expenses in 2017 were higher than previous years as TTCD hired an external evaluator to assess the entire Tyonek Grown Program.

## **b. Projections**

The following chart below shows projects for the Tyonek Grown program for 2018, 2019, and 2020. As mentioned above, TTCD plans to track volunteer time as revenue to leverage future funding and show the value of the community member time working on or supporting the Tyonek Grown program. TTCD is aware that grants are not a sustainable form of support for the organization. TTCD seeks a sustainable balance of diverse funding through earned income and donations. TTCD will continue to explore methods for increasing donations from corporations and individuals such as participating in Pick, Click, Give, donation drives, and fostering meaningful and long-lasting partnerships.

	Projections for the Tyonek Grown Program		
	2018	2019	2020
Income			
Grants/Contracts	\$ 160,000.00	\$ 150,000.00	\$ 140,000.00
Donations	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
Earned Income	\$ 5,000.00	\$ 5,500.00	\$ 6,050.00
Volunteer Time	\$ 1,050.00	\$ 1,050.00	\$ 1,050.00
Total Income	\$ 176,050.00	\$ 166,550.00	\$ 157,100.00
Expense			
Admin	\$ 100.00	\$ 100.00	\$ 100.00
Personnel	\$ 94,304.00	\$ 88,359.58	\$ 81,973.62
Fringe	\$ 29,046.40	\$ 26,847.05	\$ 24,489.60
Supplies	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
Travel	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00
Contractual	\$ 27,360.00	\$ 26,334.00	\$ 24,829.20
Total Expense	\$ 173,810.40	\$ 164,640.63	\$ 154,392.42
Net Income	\$ 2,239.60	\$ 1,909.37	\$ 2,707.58

### Revenue (Income)

The Grants/Contract line item includes grants and cooperative agreements from federal and state agencies and non-federal agencies. The Donation line item includes corporate and individuals cash donations. Earned income line item includes revenue from the sales of produce at the markets, at the NVT tribal center, and contracts to provide technical assistance to other agencies as requested. TTCD will record Volunteer time as a revenue source. The hourly wage for the volunteer will be based on the volunteer rate in Alaska annually. Tracking the value of volunteer time is important for leveraging funding as an in-kind donation, but more importantly it is a method to tracking the value of the community involvement in the program. This value can be reported to corporate donors and the local community to show in a fiscal manner the value of their involvement.

### Expenses

TTCD will track seven major subcategories: Administration, Personnel, Fringe, Supplies, Travel, Contractual, and Indirect costs. Administration will include fees and subscriptions, conference registration, and marketing. Personnel will include hourly and salary wage of all TTCD staff. Projections include 4 season staff and 1 part time Garden Manager annually, 4 full time staff (Executive Director, Conservation Director, Program Assistance, Technician), and the Grant Manager. TTCD estimates that 100% of the time of the Garden Manager and interns is dedicated to the Tyonek Grown Program, while

the total time of the full-time staff and Grants Manager decreases annually (40%, 35%, and 30%) except for the Technician which dedicates 10% of their time annually. TTCD anticipates a decrease in the time spent on the Tyonek Grown Program for staff so that they can concentrate on other programs, while Native Village of Tyonek's increases their capacity to manage the program.

Fringe expenses include health and retirement benefits for full time staff and company payroll taxes. Supplies are materials for education, outreach, and the garden operations. Travel includes costs back and forth to Tyonek from Anchorage. Contractual expenses include time for the Grants Manager/Bookkeeper, Innovative Funding to complete program support, planning, grants management and accounting duties and an accountant to complete an A-133 audit. In 2018 TTCD will track indirect expenses to prepare for applying for an indirect cost rate when ready. TTCD is anticipating increased rent expenses, as the Native Village of Tyonek has sold the building where their current offices are located. TTCD will have to move offices potentially as early as 2018 as the buildings will be torn down. Recording indirect expenses will allow for TTCD to recoup indirect expenses in grants and be in compliance with 2 CFR 200.

### c. Assets

TTCD has developed the Tyonek Garden infrastructure as a farming operation. As such, TTCD recorded assets in the operation, the cost of replacing these items, and the depreciated value. This data is important for insurance basis and to monitor lifespan and plan for replacing important infrastructure. Maintenance of the assets is not included in the depreciative value, but is expected to be conducted to maintain infrastructure integrity.

	Amount	Purchased	Life Span (YR)	Depreciative Value
Tractor	8,000.00	2015	15	6,933.33
High Tunnels	10,000.00	2013	15	7,333.33
Irrigation System	20,000.00	2015	10	16,000.00
Solar Panel System	15,000.00	2013	10	9,000.00
Fencing	10,000.00	2012	15	6,666.67
Shed	8,000.00	2015	15	6,933.33
Hydroponics	5,000.00	2016	5	4,000.00
Total	76,000.00			56,866.67

## **XI. Appendices**

### **a. Appendix A – NVT/TTCD Garden Agreement**

#### **NVT – TTCD Operation Agreement for Tyonek Garden, 2015-2017**

This operating agreement is between the Native Village of Tyonek IRA Council (NVT IRA Council), the governmental entity representing the Federally Recognized Tribe, and the Tyonek Tribal Conservation District (TTCD), a 501(c)3 non-profit organization registered in Alaska.

#### **Background and Scope of Work**

The Native Village of Tyonek began working toward the development of the Tyonek Garden in 2007. In 2011, the staff of TTCD was asked to provide technical and financial assistance for this project. As part of this assistance, TTCD has provided planning assistance and has implemented several upgrades to the Garden to improve vegetable production and provide educational opportunities. This scope of work is specific to plans for the 2015- 2017 garden seasons.

#### **Tyonek Garden Management**

The Tyonek Garden continues to be owned solely by the Native Village of Tyonek, with TTCD serving as a supporting partner and garden manager. NVT and the Tyonek community, including the youth, will establish annual goals for the garden. TTCD will serve as the managing entity and will manage the garden according to NVT's goals.

TTCD has invested considerable funding and staff time over the past three years in the development of the Tyonek Garden. NVT staff has also invested many hours over the course of many years into the development of the Tyonek Garden. Moving forward, it is expected that both entities will continue to dedicate time to this project in the spirit of partnership.

#### **Overall Vision and Goals**

Vision: A natural, self-sustaining (nutritionally and economically) farm, that provides healthy food to all interested residents. The garden is open to the community, grows diverse crops, is healthy space for growing community food and holding community gatherings, involves youth and provides food to Elders.

1 year goal: Expand fields and begin crop rotation plan. Improve irrigation methods. Increase availability of food to community members.

3 year goal: Create enough compost at the garden to sustain soils organic matter. Begin seed saving. Incorporate traditional plants exhibit. Develop on site root cellar and/or storage.

#### **Garden Employment**

TTCD has sought and received grant funding to employ youth workers in 2015 and 2016 at the Tyonek Garden. TTCD will work closely with NVT during hiring and employment of youth. TTCD staff will travel to Tyonek to supervise youth multiple times a week. NVT staff will provide supervisory support on an as needed basis.

If employment opportunities arise for the completion of garden related tasks, TTCD will communicate with NVT and seek to hire local support on an as needed basis.

### **Future Garden Plans**

#### Expansion and Infrastructure Upgrades

In the next three years, TTCD will work cooperatively with NVT to expand usable space within the garden to grow additional food. Through grant funding, TTCD will also purchase additional equipment and upgrade current infrastructure to improve overall functioning of the garden.

#### Food Distribution

First priority for distribution of garden produce will be Tyonek elders, as this has been a goal of NVT and TTCD from the beginning. Other produce will be sold in Tyonek to provide a low cost, local, healthy food option and also to support the continued operation of the Garden. Remaining produce will be sold in Anchorage to provide financial support for the operation of the Garden.

#### Garden Education and Outreach

Several other Alaska Tribal Conservation Districts and Alaska Native communities have expressed interest in the Tyonek Garden. TTCD, with permission of NVT, will bring individuals from other communities to Tyonek to learn about the Garden and to assist with tasks. TTCD will work with NVT to include NVT staff and Tyonek community members in these trainings.

### **Roles and Responsibilities:**

#### The Native Village of Tyonek IRA Council will:

1. Provide direction to TTCD on NVT's long term goals for the garden.
2. Select up to three points of contact to serve as NVT representatives for TTCD to meet with regularly regarding status of the Tyonek Garden.
3. Provide assistance for maintenance of garden infrastructure, including:
  - High tunnels
  - Fencing, gate, and walkways.
  - Water tower and sheds
4. Provide assistance for the installation of garden infrastructure as needed, in cooperation with TTCD staff.
5. Assist with delivery of materials from barge or airplane as needed for garden development.
6. Plow and remove snow from high tunnels throughout winter as needed (see Note below).
7. Any items requiring replacement because of vandalism are the responsibility of NVT.
8. Provide assistance with supervision of youth garden workers as needed.



9. Assist with distribution of vegetables to elders, and sale of vegetables to local residents at the tribal center with TTCD support.

NOTE: In 2012, NVT requested TTCD's assistance in applying for funding for two high tunnels for the Tyonek Garden. NVT then entered into a contract with USDA Natural Resources Conservation Services for the purchase of two high tunnels with federal funding. NVT is responsible for maintaining these high tunnels for the length of the contract, until 2016. If high tunnels are destroyed for any reason, NVT bears the full cost of replacing these high tunnels.

The Tyonek Tribal Conservation District will:

1. Hire and provide employer services and training to summer youth employees.
2. Provide financial and technical assistance for the installation of garden infrastructure as needed, in cooperation with NVT staff.
3. Assist with maintenance of garden infrastructure as needed, and provide training on maintenance methods to NVT staff.
4. Coordinate with school to grow vegetable starts for the garden, and cover costs of needed materials.
5. Coordinate with NVT, school, and community to plant, care for, and harvest produce from the garden.
6. Provide harvested produce to NVT for distribution to elders and Tyonek Food Bank, as well as sale of produce. TTCD will also engage in produce sales in both Tyonek and Anchorage. All funds raised will support the continued production of food at the Tyonek Garden.
7. Seek to obtain funding for future jobs in the Tyonek garden, through grants as well as the sale of produce.
8. TTCD is not responsible for any damage, vandalism, or action compromising the integrity of garden materials, structures, and equipment.

**It is mutually agreed that:**

1. TTCD takes no ownership of the Tyonek garden. NVT will make all ultimate decisions regarding the community garden. TTCD's role is to provide technical and financial assistance, and to manage the garden according to NVT goals.
2. Continual communication between NVT and TTCD throughout the course of this project is necessary for the success of this project.


Native Village of Tyonek



Alfred Goozmer, President

Date: 4-9-15

Tyonek Tribal Conservation District



Christy Cincotta, Executive Director

Date: 5/20/15



**b. Appendix B – Tyonek Native Corporation: Lease for the Space**



**PERMIT #:** 201712.26.MOQ  
**Effective Date:** 12/01/2017  
**End Date:** 12/31/2020

**Permit Issued to:**

Name: Native Village of Tyonek Phone#: 907.583.2201  
Address: PO BOX 82009, Tyonek, AK 99682 Email: ccincotta@tyonek.com


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**BY ACCEPTANCE AND USE OF THIS PERMIT, PERMITTEE AGREES TO THE FOLLOWING:**

1. This Land Access Permit is issued for site access and use for the Tyonek Garden Area.
2. Permittee will submit a written post-activity report outlining activities. This report shall include the number of game harvested if hunting, and any issues that need to be addressed by TNC within **30 days'** of completion of permit activities.
3. Permittee's activities shall cause the least practicable temporary and permanent harm to the land.
4. Permittee's activities on TNC lands will be limited to the permitted area(s) as described in **Exhibit A**.
5. This Permit is issued for the period specified, is non-transferable and revocable at TNC's sole discretion.
6. Permittee will comply with all Federal, State and Local laws and regulations.
7. **Cutting of live trees is absolutely prohibited.** Dead or downed timber may be used for firewood.
8. Permittee will take all precautions necessary to prevent wildfires. Permittee will take reasonable actions to suppress wildfire if safe to do so. Permittee will immediately report wildfires to **Alaska Interagency Fire Dispatch, 1-800-237-3633 and TNC Lands, 907-272-0707.**
9. Burial of trash is not permitted. All refuse and materials shall be removed from TNC lands.
10. Permit does not grant Permittee exclusive use of TNC lands.
11. Permittee will indemnify, hold harmless and defend TNC against all claims and liability for any damages, costs, losses or expenses resulting from, arising out of, or in any way connected with the use of TNC lands by Permittee.
12. Permittee is liable to TNC for any damage, injury, or expense incurred by TNC in any way arising from or connected with any breach of the terms or stipulations of this Permit.
13. Permittee shall protect all survey monuments, witness corners, reference monuments, mining claim posts or bearing trees against damage, destruction or obliteration. Any damage or obliterated markers shall be re-established by the Permittee in accordance with accepted survey practices of the State.
14. Permittee shall contact **907-272-0707** to report any unpermitted access or use with vehicle description and license number.
15. Permittee shall maintain such insurance as is commercially reasonable in regards to Permit Holder's activities on TNC lands and maintain in force throughout the term of this Permit.
16. Permittee shall assume the responsibility and risks for his or her own safety and the safety of others in their party. TNC does not warrant the safety of these undeveloped lands.
17. Permittee's failure to comply with these stipulations voids this Permit.

Applicant has read, and is familiar with, the stipulations of this Permit for use of TNC lands. All activities will comply with the stipulations set forth, and any other special conditions specified by TNC in issuing this Permit. Any special conditions are listed as an attachment to this Permit. This permit is **NOT** valid unless signed and authorized.

**This Permit MUST be carried with you when entering TNC land.**

Signed \_\_\_\_\_  
  
Authorized By \_\_\_\_\_

Date \_\_\_\_\_  
12/11/17  
Date \_\_\_\_\_

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TNC PERMIT - 201712.26.MOQ

**EXHIBIT A**

Permitted Area

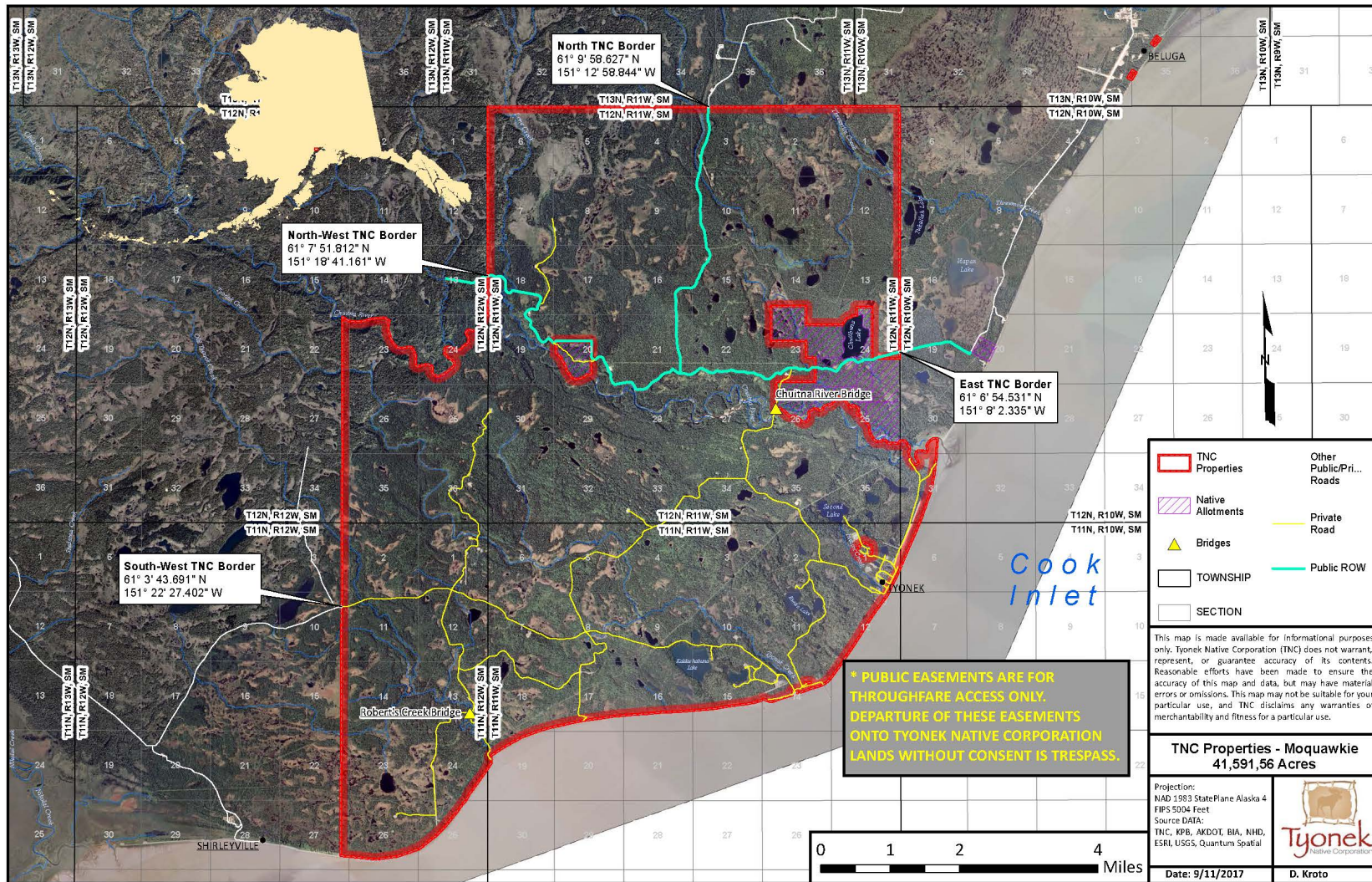
S01, T011NR011W SM

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TNC PERMIT - 2017 12.26.MOQ



# Tyonek Grown: A Business Plan for Sustainability December, 2017



## c. Appendix C – Tyonek Grown Goals and Strategies

<b>Goals and Strategies</b> <i>(what we want to do)</i>	<b>Objectives</b> <i>(how we're going to do it)</i>	<b>Metrics</b> <i>(how we're going to measure our progress toward getting it done)</i>	<b>Current Status</b> <i>(what's going on in 2017)</i>
<b>Goal I: Provide technical and management assistance for the Tyonek Garden in accordance with NVT goals.</b>			
<i>I.A. Work with the NVT Garden Committee annually to discuss management options and review goals.</i>	Tyonek Grown meets with NVT Garden Committee once 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].
<i>I.B. Manage Tyonek Garden under an organic and sustainable management framework.</i>	Each year, 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 2022, 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.	
<i>I.C. Maximize produce served in the Tyonek Elders' Lunch Program and shared with elders for cooking at home.</i>	By 2020, 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 2020, 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.	

<b>Goals and Strategies</b> (what we want to do)	<b>Objectives</b> (how we're going to do it)	<b>Metrics</b> (how we're going to measure our progress toward getting it done)	<b>Current Status</b> (what's going on in 2017)
<i>I.D. Maximize participation with, and produce served at, the Tebughna School.</i>	By 2020, increase the number of months produce is available to the Tebughna School lunch and snack programs to 8 months.	Track number of months produce was available for purchase for the Tebughna School snack and lunch programs. Track number of meals served with Tyonek Grown produce. Track number of pounds sold to or donated to Tebughna School.	In 2017, Tyonek Grown completed the first transaction for produce with the KPBSD. To date 34 pounds of produce has been sold to KPBSD. Needs of the school will change annually.
<i>I.E. Maximize produce sales at the weekly Tyonek Grown farmers' market and Tribal Center.</i>	By 2022, $\geq 50\%$ of Tyonek produce is sold in Tyonek annually.	Track number of pounds sold in Tyonek at the Garden Market, the Tribal center, at the Tebughna School, or using TG Veggie Bucks, or other methods of sale in Tyonek.	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.
<i>I.F. Increase year-round access to Tyonek Grown produce.</i>	By 2022, Tyonek Grown produce is available to Tyonek community members 12 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.
<b>Goal 2: Build capacity within the Tyonek community to manage the Tyonek Garden for its long-term success and sustainability.</b>			
<i>2.A. Increase or maintain levels of student participation in garden education at the Tebughna School.</i>	By 2020, the number of Tyonek Grown student activities increases to 5 per year.	Track number of activities per year with students.	TTCD currently completes a seed planting, blessing ceremony, potato harvest, and harvest ceremonies/activities. These activities are projected to change over time with hydroponics and the growth of the program.
	By 2022, student understanding of sustainable agriculture concepts increases so that 3 students lead the seed planting and transplanting instructions for younger students each year.	Track the number of student led activities.	Currently, students are periodically asked to help with lessons led by TTCD.



<b>Goals and Strategies</b> (what we want to do)	<b>Objectives</b> (how we're going to do it)	<b>Metrics</b> (how we're going to measure our progress toward getting it done)	<b>Current Status</b> (what's going on in 2017)
2.B. Expand or maintain interest and participation in the Tyonek Grown internship program.	Each year, the Tyonek Grown includes at least four interns per year.	Track the number of interns each year. Track number of hours interns work. 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.
2.C. Continue and/or expand volunteer program.	By 2022, the number of Tyonek Grown volunteers increases to 10 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 2022, NVT contributes 200 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.
<b>Goal 3: Increase the Tyonek Grown program's ability to sustain itself financially.</b>			
3.A. Increase earned income from produce sales, workshops, and other sources.	By 2022, earned income from produce sales, workshops and non-grant donations will meet or exceed 50% 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.B. Streamline garden systems including production (long-term), sales and distribution (near-term).	By 2022, increase garden production efficiency (Dollars and pounds/ per 100 square feet.)	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.



<b>Goals and Strategies</b> <i>(what we want to do)</i>	<b>Objectives</b> <i>(how we're going to do it)</i>	<b>Metrics</b> <i>(how we're going to measure our progress toward getting it done)</i>	<b>Current Status</b> <i>(what's going on in 2017)</i>
	By [2022], source [75%] of the 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, <sup>1</sup> Arctic Harvest CSA <sup>2</sup> 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 [2020], 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 [20 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.
<b>Goal 4: Support the rural Alaska food system by demonstrating and promoting sustainable agriculture practices using the Tyonek Garden and available outreach avenues.</b>			
4.A. <i>Provide community gardening education and technical assistance for rural Alaska communities.</i>	By 2022, TTCD teaches community gardening to 50 participants from 5 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. <i>Share the Tyonek Grown story.</i>	By 2022, Tyonek Grown has been featured in 10 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 <a href="https://www.adn.com/culture/article/shannon-kuhn-students-tyonek-garden-classroom/2014/10/10/">https://www.adn.com/culture/article/shannon-kuhn-students-tyonek-garden-classroom/2014/10/10/</a>

<sup>1</sup> [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.

<sup>2</sup> [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.

<b>Goals and Strategies</b> <i>(what we want to do)</i>	<b>Objectives</b> <i>(how we're going to do it)</i>	<b>Metrics</b> <i>(how we're going to measure our progress toward getting it done)</i>	<b>Current Status</b> <i>(what's going on in 2017)</i>
4.C. Continue and expand management of rural Alaska garden Facebook group.	By 2022, grow Facebook group to 100 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.