

International Service Montana Rotary Global Coalition

Guatemala Water Projects

Presented to

District 5390 Presidents Elect

March 1, 2020

DGE Sandy Carlson & PDG Rick Moore



Rotary 

Why Rotary?

CLEAN WATER

DISTRICT 7070



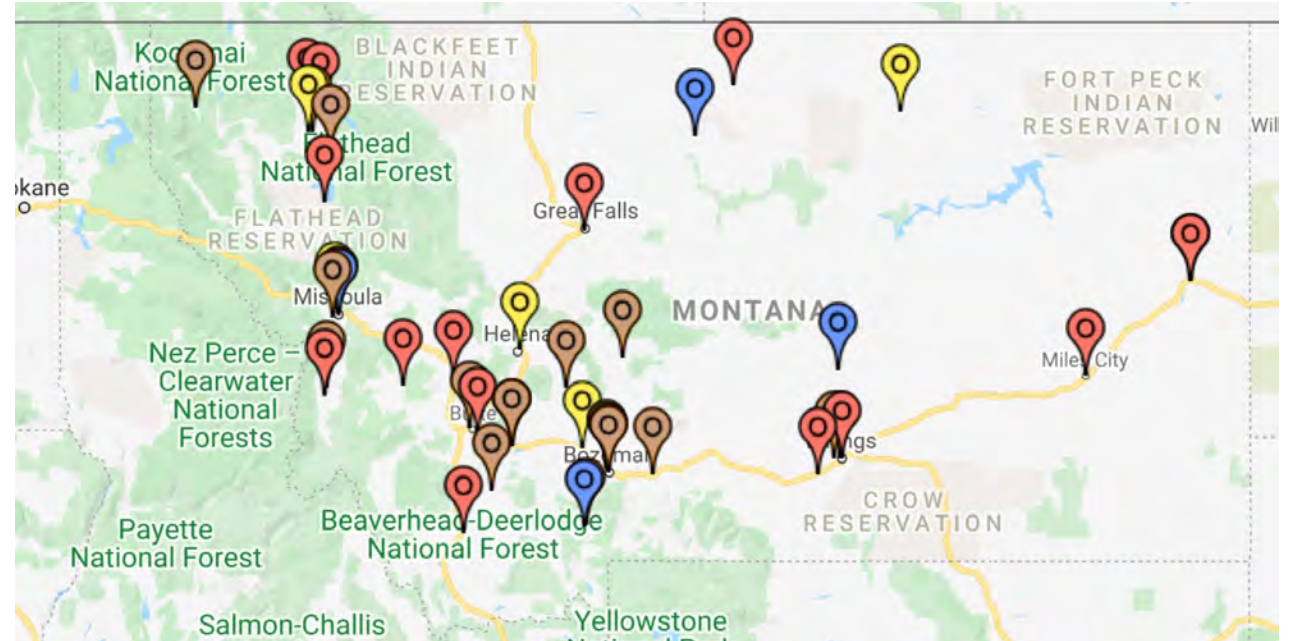
Rotary



**BIGFORK 🌀 COLUMBIA FALLS 🌀 EVERGREEN 🌀 KALISPELL (2)
KOOTENAI VALLEY 🌀 MISSOULA (2) 🌀 POLSON 🌀 WHITEFISH
MONTANA, USA**

Montana Rotary District 5390

- 40 Clubs
- 1,600 Members
- Sustainable Global Coalition
 - 11 Clubs
 - About 525 members
 - Each Club contributes \$30/member per year



The Rotary Foundation (TRF)

- Charity Navigator Rating
 - Overall Score 100 Five Stars
 - Financial 100
 - Accountability and Transparency 100

Guatemala Rotary Projects

- El Progreso
- Pasac
- La Vega



Why Guatemala?

Montana, Montana Rotary Clubs and Helena have long ties with Guatemala



Mission Santo Tomas la Union



Mission Santo Tomas la Union

- Established by the Diocese of Helena in 1964
- 65 northwest of Guatemala City
- Sheila McShane from Helena served as the Clinic Coordinator from 1968 to 2019
- Carroll College Engineers without Borders has worked on projects for the mission
 - Water supply for the Mission's school
 - Reinforcement of school building to better survive earthquakes

VISITORS / VOLUNTEERS



ROTARY LIBBY MONTANA

WATER PROJECT:
San Juan María, Sohomib, Asunción.



ENGINEERS WITHOUT BORDERS



MINISTRY STUDENTS
CARROLL COLLEGE
UNIVERSITY OF MONTANA
MONTANA STATE UNIVERP

ENGINEERS WITHOUT BORDERS



ROTARY LIBBY MONTANA

WATER PROJECT:



MINISTRY STUDENTS
CARROLL COLLEGE
UNIVERSITY OF MONTANA
MONTANA STATE UNIVERP

Sheila McShane

HOMENAJE A SHEILA ANN MCSHANE

“Sin nada venimos Sin nada nos vamos”

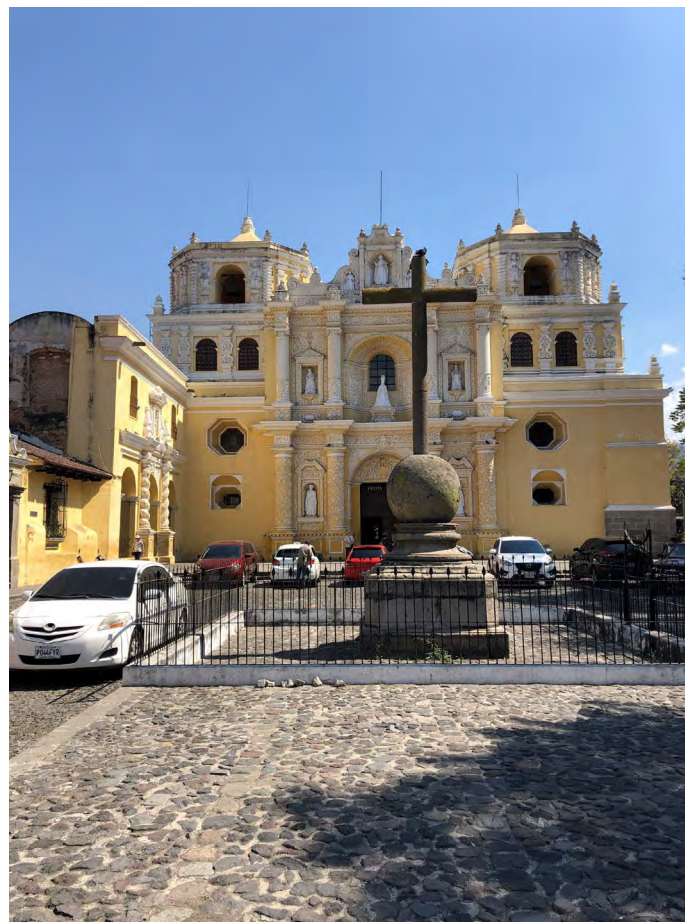
**Partiendo de Elena Montana USA a la
misión de Guatemala Marzo 1968**



**Agradecimiento por su labor
Humanitaria Julio 2019**



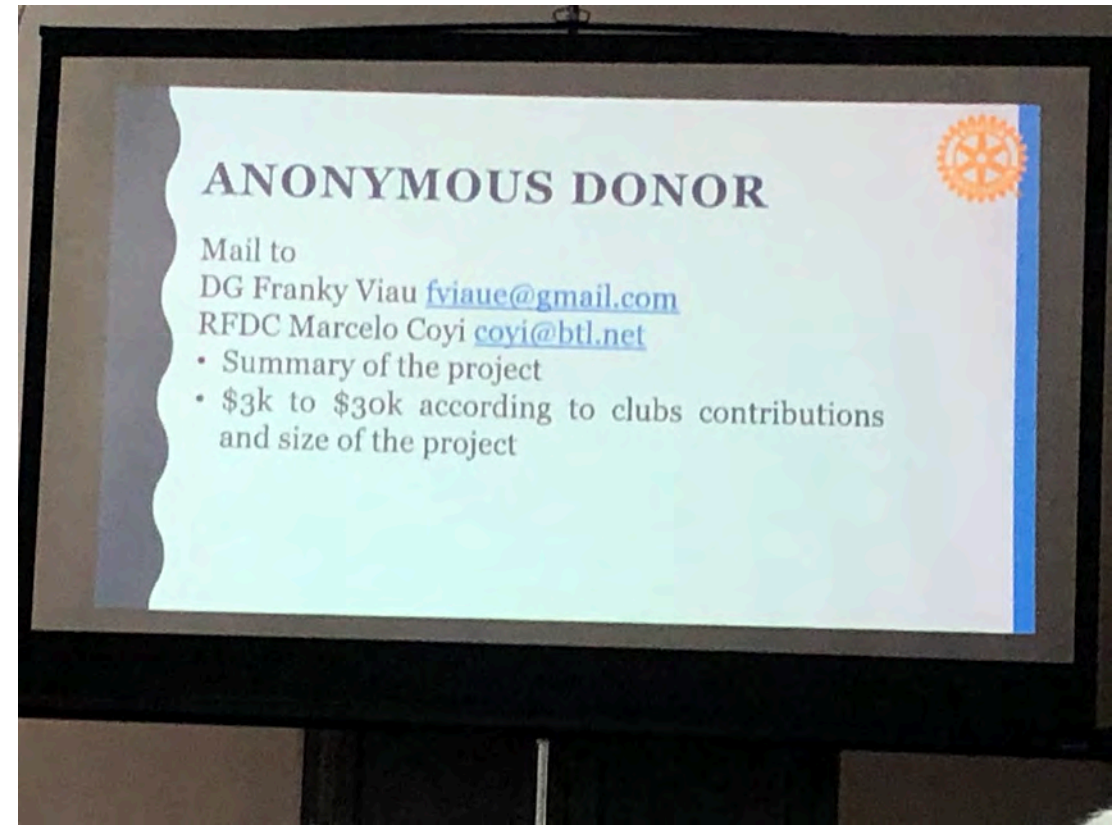
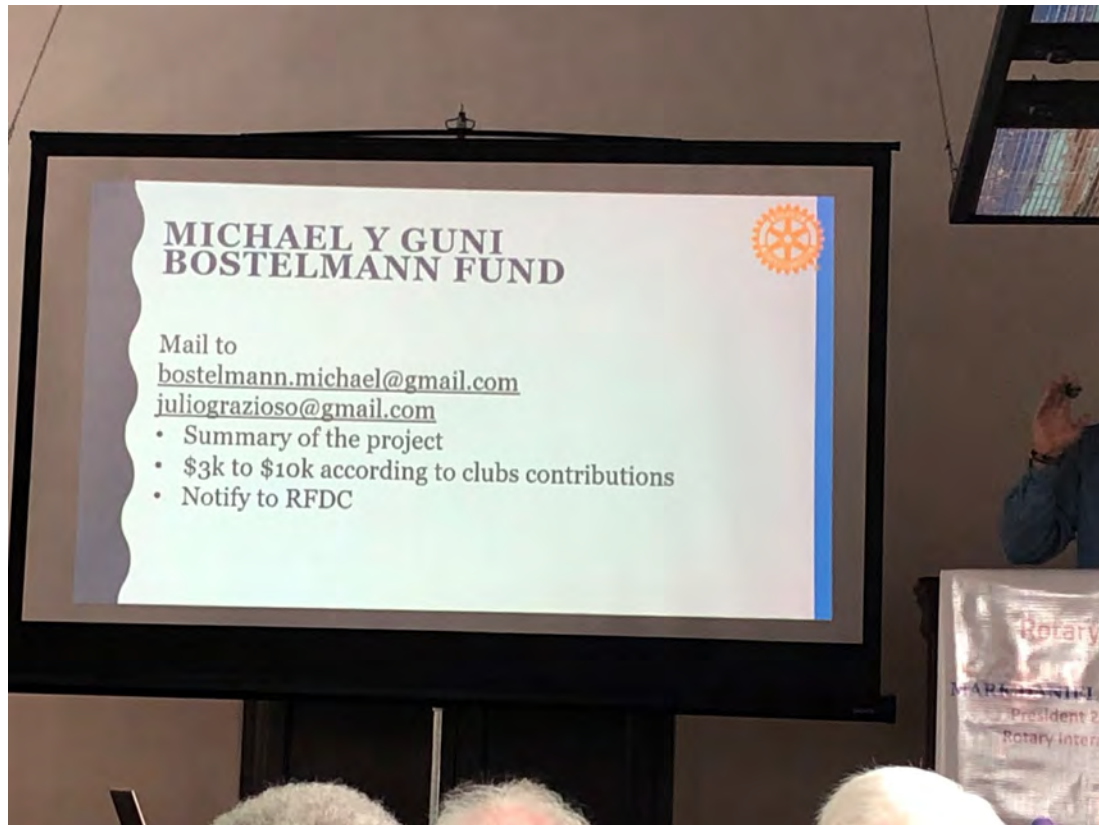
Antigua



Project Fair



Some Possible Additional Sources of Funding Identified at the Project Fair



Maya Pedal



Maya Pedal

- Corn Cobber delivered to family in Corrales



Maya Pedal



Maya Pedal



Rotary Club of Kootenai Valley Past Projects

- **SOHOMIP**

- Population: 250
- Project Description: Captured water at a local spring and conveyed water to the residents of Sohomip. Water was conveyed by gravity to homes in Sohomip. An existing holding tank was utilized.

- **SAN JUAN MAZA (PHASE 1 & 2)**

- Population: 2,000
- Project Description: Captured water at a local spring and conveyed water a distance of 10 km to the residents of San Juan Maza. Water was conveyed by gravity to a new concrete holding tank, and from there to a distribution network throughout the community.

- **LA ASUNCION SCHOOL**

- Population: 600
- Project Description: Captured water at a local spring and conveyed water to La Asuncion school. Water was conveyed by gravity to an existing holding tank at the school.

The Rotary Foundation Global Grants

- Six Areas of Focus
 - Peacebuilding and Conflict Resolution
 - Disease Prevention and Treatment
 - Water Sanitation and Hygiene
 - Maternal and Child Health
 - Basic Education and Literacy
 - Economic and Community Development

Parameters for Eligibility

TRF considers the following activities to be within the scope of the water, sanitation, and hygiene area of focus:

- Ensuring access to safe drinking water, including projects focused on water supply, storage, purification, treatment, and source water protection
- Providing hygiene education that promotes healthy behaviors such as hand washing, safe disposal of human waste, safe water storage, and proper menstrual hygiene. The program must identify the factors that prevent or encourage positive behaviors and describe how to address barriers

Parameters for Eligibility

TRF considers the following activities to be within the scope of the water, sanitation, and hygiene area of focus:

- Using watershed management practices to protect source water and recharge surface and groundwater resources
- Supplying water for crop, livestock, and fisheries production
- Developing sustainable management practices to support water and sanitation services, including community governance, financing and planning, system maintenance, and delivery

Water, sanitation, and hygiene global grants are:

- Sustainable — Communities and governments can better address their water, sanitation, and hygiene needs after the Rotary club or district completes its work.
- Measurable — Sponsors need to set targets and identify measurements to track project outcomes in water, sanitation, and hygiene and water resource management.
- Community driven — Projects meet the needs identified by the host community. Governments, communities, and businesses work together to build, own, and operate sustainable water and sanitation systems.

Examples of Projects that aren't Sustainable

Water of Ayolé



Slide Background: <http://math.hws.edu/eck/js/mandelbrot/MB.html>
Monat, J.P. and T.F. Gannon. 2018. Applying Systems Thinking to Engineering and Design. Systems 2018, 6, 34; doi: 10.3390/systems6030034
www.mdpi.com/journal/systems

Image: <https://enphiltba.wordpress.com/2013/11/13/the-water-of-ayole/>

Examples of Projects that aren't Sustainable



Elements of Sustainability

- *Community driven* — Projects meet the needs identified by the host community. Governments, communities, and businesses work together to build, own, and operate sustainable water and sanitation systems.
- *A community assessment* — Used to help communities choose the correct technology based on an understanding of the technical, financial, and managerial implications of their choice.
- *Proper financial planning* — Rotarians collaborate with communities, governments, and the private sector to identify the costs associated with the implementation and maintenance of water, sanitation, and hygiene programs and infrastructure.

Elements of Sustainability

- *Hygiene education and behavior change communication* — Providing hygiene education for behavior change is a required component of all water and sanitation projects applying for global grant funding.
- *Monitoring and Evaluation* — The regular monitoring and reporting of core water, sanitation, and hygiene measurements are essential activities of every water and sanitation project.
- *Governance* — Water, sanitation, and hygiene governance refers to the political, social, economic, and administrative systems in place that influence the use and management of water, sanitation, and hygiene resources.

Partnership Requirements

- To apply for a global grant, two or more Rotary clubs or districts must work together.
 - The **host sponsor** is the partner in or near the community that's implementing the project.
 - The **international sponsor** works with the host sponsor, but it's located outside of the host sponsor's country.
- All sponsors must meet global grant requirements and eligibility.

Host Sponsor – Rotary Club of Mazatenango

- Initiates the project
- Conducts a community assessment
- Manages project implementation and budget
- Provides local assistance and support to training teams during their time abroad
- Receives project funds





International Partners

- Provides financial assistance, technical support, and other guidance
- Prepares grant application
- Performs project tasks that can be done remotely, as well as participating in service during site visits

International Sponsors

- El Progreso: Rotary Club of Kootenai Valley
(Libby/Troy)
- Pasac: Rotary Club of Kootenai Valley
(Libby/Troy)
- La Vega: Rotary Club of Kalispell

Cooperating Agencies

- Collaborating with another organization can enhance the quality and effectiveness of a project.
- A cooperating organization can provide technical expertise, advocacy, training, education, or other support.
- Although other organizations and volunteers may play a large role, the project sponsors are ultimately responsible for the financial management of the grant and for ensuring that the project achieves its intended results.

Cooperating Agencies

- El Progreso: Montana Professional Chapter of Engineers without Borders
 - Reviewed the design of the water tank and chlorination system
 - Designed storm water drainage system for area around school
- La Vega: Fund Azucar (an organization funded by the sugar cane industry)
 - Conducted a community assessment
 - Developed a plan for a well, water tank, distribution system and chlorination system

Our *Federales* Escort



El Progreso

- This project is located in SW Guatemala.
- This community was established at its present location in the 1980's when the village was forcibly relocated at the end of the devastating 15 year revolution.
- These villagers were relocated from the green, fertile central highlands to the hot coastal plains.
- The only source of water was a terribly polluted river about a mile from their community.
- Current population is approximately 240 people.

Original Water Source



Trail to Water Source



Location of Start of Trail



El Progreso Project

- The clean water project consists of a deep well to an estimated depth of 360 feet.
- Electrical service, pumping system, holding tank and a pump house.
- Chlorination System

Key Guatemalans in our Water Projects

David Ruiz, Engineer

Gerardo Diaz Palomo –
Rotary Club of
Mazatenango



El Progreso Water Tank



El Progreso Pump House



El Progreso Chlorination Unit



Soccer Field at the El Progreso School



El Progreso Budget

Item	Cost (US Dollars)
Well	20,000
Pumping Equipment	11,939
Single Phase Power Line	9,929
Control Box	3,428
Elevated Tank	9,757
Taxes	613
Engineering	3,121
Project Management	2,979
Initial Operations	5,337
Total	\$67,114

El Progreso Funding

Source	US (Dollars)
Rotary Club of Kootenai Valley	17,389
Montana Rotary District 5390 District Designated Funds (DDF)	16,561
Montana Engineers without Borders	5,000
Mazatenango Rotary Club	105
Guatemala District 4250 DDF	2,000
The Rotary Foundation World Fund	26,892
Non-Rotarian Cash Contributions (not matched by The Rotary Foundation)	5,000
Total	\$62,114

El Progreso: Training and Education

- Sanitation and hygiene: Appropriate training for villagers is provided on how to keep their well and water distribution system clean. This training will be provided by the Rotary Club coalition and the Mazatenango Rotary Club.
- Training for operation and maintenance of the well system is provided jointly by the Mazatenango Club, the well driller and others. It will be focused on first echelon, routine maintenance and troubleshooting of the system.

Pasac

- Pasac is a village in northwest Guatemala with a population of approximately 1,350.
- The village survives economically on the cultivation of coffee beans and bananas.
- The formation of a well-developed coffee cooperative has enabled the village to prosper by selling their coffee beans collectively to the U.S. market as organic coffee beans.
 - Libby Rotarian Eileen Carney was instrumental in the formation of this cooperative while she was staying at the Mission Santo Tomas La Union

Project Need

- The cooperative has struggled over the past ten years due to seriously diminished water supply due to:
 - Deteriorating collection system
 - Longer dry season due to climate change
- Problems with the water supply threatens their organic certification
 - Deterioration of the collection system means they cannot protect their source from contamination
 - Other growers upstream of them are using chemicals to control coffee bean diseases brought on due to the longer, hotter dry season
- The organic certification for coffee beans is difficult to obtain, and adds considerable market value to their crop

Pasac



Pasac Women's Committee welcoming George Girard



Pasac Women's Cooperative Members



Coffee Processing Facility



Pasac Cofffee Cooperative



Scope of the Pasac Project

- The project involves construction of a gravity feed water system for domestic and agricultural purposes
- The community owns a producing, high volume, pristine quality artesian spring and land around the spring
 - The spring is located about 4 kilometers above the village higher in the mountains
 - The current shortage of water is due primarily to an undersized pipe originally installed
 - The 20 year old pipe is also in poor condition, with many leaks

Design Parameters

- Pipe diameter and strength increased
- Rerouted to avoid slide areas
- Armored with protective rock and concrete where needed
- New route will improve water flow by providing a more uniform drop
- New pipeline will deliver 40 gpm during dry season, a 5 fold increase in flow over the current system
- New elevated water storage tank

Sustainability

- System was designed with the community leaders to meet the needs of the community
- An operation plan has been written as part of the community's overall water plan
- The system is gravity fed, so there are now electrical pumps or to maintain
- The community has a Maintenance Committee and will have a paid community employee to maintain the system
- The Community Water Council has levied 5Q (\$.80) per month for every adult person for operations and maintenance costs

Estimate Budget

Item		Cost (US Dollars)
Pipeline	Supplies	35,795
	Labor	8,763
Water Tank	Supplies	19,806
	Labor	6,476
Shipping		2,245
Engineering & Project Management		10,810
Training		1,000
Monitoring & Evaluation		2,540
Permits		700
Contingency		3,000
Banking Fee		1,500
	Total	\$92,639

Funding

Source	US (Dollars)
Rotary Club of Kootenai Valley	30,993
Montana Rotary District 5390 District Designated Funds (DDF)	16,000
Guatemala Rotary District 4251 DDF	2,000
District 5890 DDF (Houston)	5,000
Rotary Club of Mazatenango	105
The Rotary Foundation World Fund	38,547
Total	\$92,639

Groundbreaking Ceremony on 1/29/2020



La Vega Water and Sanitation Project

- This Rotary project will impact over 1,300 lives in the community of La Vega, Guatemala by providing a safe and reliable drinking water source (Phase 1) and sanitation services (Phase 2).
- Phase 1 will involve drilling a well, constructing a water storage tank, and installing water distribution lines to homes.
- Phase I to provide potable water will cost \$315,200. The second phase to improve sanitation will be constructed after Phase 1 is complete and operational.

La Vega

- La Vega is a resettlement community established about 25 years ago. Prior to resettlement, the residents of La Vega lived in the mountainous region of northern Guatemala dominated by Mayan peoples.
- The army of Guatemala attacked Mayan Indian villages where they thought guerrillas were working against the government. The villagers were caught between the warring sides and fled to Mexico where the UN had established refugee camps.
- When the war ended, they were resettled far from their own land. The people in La Vega came from the mountains in the north of Guatemala but were sent to the tropical Pacific coast region. No water, sewer nor other services were provided.
- There are approximately 1,340 residents.

La Vega Community

- Currently, residents of La Vega rely on individual shallow wells that are generally 30 feet (9.1 m) deep.
- Homes in the community use individual pit toilets. Therefore, most wells are contaminated by fecal coliform necessitating the need to boil water before drinking.
- In addition, the community is surrounded by sugar cane and rubber tree plantations and is located at the end of a large watershed. The proximity to production agricultural and location within the watershed introduces other pollutants to their drinking water.
- Water borne diseases are a constant presence in the community resulting in lost wages and poor health outcomes.



La Vega Children with DGE Sandy



Village Briefing



Village Briefing



Typical Residential Wells



Sustainability

- Over 180 La Vega community residents participated in the community assessment process
- La Vega community water committee
- La Vega residence maintenance committee
- La Vega residence governance committee
- Hygiene training pre and post project
- Community members who receive water from the new water system will be charged a tariff for water consumed. Meters to measure water consumption will be installed at every delivery point.

La Vega Budget: Water System Only

Item	Cost (US Dollars)
Well	58,600
Pump	8,200
Chlorination Unit	1,650
Pump House	4,500
Pipeline	2,800
Water Tank	88,400
Distribution System	97,400
Control Valves	2,200
Service to Homes	71,500
Total (Approximate)	335,250

Funding – Rotary Districts

District	Amount
Montana District 5390	30,000
Western & Central Nebraska 5630	15,000
Iowa 6000	8,200
San Francisco Bay Area 5170	6,000
Northern Oregon 5100	10,000
Guatemala	2,000
Northwest Washington 5020	5,000
Kentucky 6710	5,000
Quebec & Vermont 7040	1,000
Total DDF	\$82,200

Funding – Rotary Clubs

Rotary Club	Amount (US Dollars)
Kalispell	31,500
Big Sky	5,000
Townsend	600
Oakland	6,000
Louisville	5,000
Keizer, OR	5,000
Tipton, IA	3,000
Portland, OR	5,000
Montreal	1,000
Bainbridge Island	5,000
Des Moines	2,000
O’Neill, NB	1,000
Total	\$65,100

Total Funding (January 2020 Estimate)

Source	Amount (US Dollars)
District Designated Funds	82,200
Rotary Clubs	65,100
Cash Contributions not Matched by TRF	3,500
The Rotary Foundation World Fund	116,750
Total	\$268,050
Budget	\$335,250
Shortfall	\$67,200

La Vega Project Prospect

- Additional Sponsors have been identified
- We believe that the necessary additional funds will be raised to allow us to apply for the grant from The Rotary Foundation for Rotary Year 2020-2021.
- Project could then start in the Spring of 2021
- Planning and fundraising will begin for the wastewater system once the water system grant is approved

For more information:

- Sustainable Global Coalition
 - nwmtcoalition@gmail.com
- Rotary Club of Kalispell
 - www.kalispellrotary.org
- Facebook
 - Montana Rotary Coalition - La Vega Water Project
- District International Service Chair Terri Smiley
 - tallterri09@yahoo.com

