



La Vega, Guatemala Water Project

Rotary Club of Kalispell and Partners

Dear Friend,

Thank you for your interest in helping the Sustainable Global Coalition, our partners, and the community of La Vega, Guatemala secure a safe and reliable water source for 1,340 adults and children. This packet provides detailed information about the project and is our invitation to you to participate in this life-saving project for the families of La Vega.

Your packet contains:

- One-page summary of the project
- Proposed project schedule and milestones
- Sections of a detailed report about the community of the La Vega, description of the project, and a detailed project cost estimate. The complete report is available upon request.
- Project Organizational Chart and Roles
- Donor Commitment Form

Our Sustainable Global Coalition and international partners have worked in Guatemala for over 10 years and successfully completed 2 Rotary International Global Grant water projects. The Coalition is currently working on three projects, including the La Vega water project. We have assembled a highly capable and comprehensive team to design and implement sustainable projects in Guatemala.

If you would like additional information or have questions for us, please contact Mitch McKinley at (406) 314-8321 or email nwmtcoalition@gmail.com.

Thank you again for your interest in the La Vega Water Project! A Donor Commitment form is included as the last page of this packet. We would love to work with you and hope you will join us on this critical effort to provide clean water to people in need. Together, we can change lives for the better.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Rohweder".

Mark Rohweder
Rotary Club of Kalispell

Phase I: Water Global Grant 18-72020 in La Vega, Guatemala

Our 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.

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.

Phase 1 will solve the issue of contaminated water. To implement a successful project, our Rotary coalition has built strong partnerships with local and international organizations: Fundazucar, Rotary Club of Mazatenango, Engineers Without Borders, and a Guatemalan engineer. This project will be assisted through in-kind contributions from the communities in the form of local labor, local funding, and local leadership.

By providing clean and accessible water, this grant will give much-needed support to the existing community. With your support we can assist this community sustain and growth in a healthy environment.

We need you, your club, and district to help raise these funds to change lives. This project is led by Mitch McKinley with the Rotary Club of Kalispell, Montana in Rotary District 5390. We plan to submit this Global grant in July 2019. Help us transform the lives of people in Guatemala with this project, please! For more information please contact Mitch McKinley at (406) 314-8321 or via email at nwmtcoalition@gmail.com. The Rotary Club of Mazatenango is the host club in Guatemala.



Typical residential water well in the community of La Vega and how water is removed from the well. Proposed water tank at La Vega.



La Vega Project Schedule and Milestones

Item	Responsible Party	Est. Completion Date	Completion Date
Community Assessment	FundAzucar		2014
Water and sanitation design	FundAzucar		2014
Request for Project & visit community	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders		September-16
Visit Community	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders		October-17
Visit Community	Guatemalan Engineer & Engineers without Borders		July-18
Draft Global Grant Application	Rotary Club of Kalispell		April-18
Visit Community	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders	November-18	November-18
Project Fair and visit community	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders	January-19	January-19
Estiblish required committees and project governance	Sustainable Global Coalition & Mazatenango Rotary Club	April-19	Apr-19
Secure project funding	Rotary Club of Kalispell	July-19	
Submit complete Global Grant	Rotary Club of Kalispell	July-19	
CADRE visit	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders	July-19	
Health, Sanitation, and Goverance training	FundAzucar	November-19	
Complete water project, conduct health and maintenance meetings	Sustainable Global Coalition, Mazatenango Rotary Club, Fundazucar & Engineers without Borders	October-20	
CADRE visit	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders	October-20	
Monitoring trip & Cadre visit	Sustainable Global Coalition, Mazatenango Rotary Club & Engineers without Borders	October-21	

FUNDACIÓN DEL AZÚCAR
DIRECCIÓN DE DESARROLLO MUNICIPAL



Water System Construction
COMMUNITY LA VEGA, MAZATENANGO, SUCHITEPÉQUEZ

Guatemala, November 2015

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LIST OF PLANS

DEPARTMENT:	Suchitepéquez
MUNICIPALITY:	Mazatenango
COMMUNITY	La Vega
DATE:	November 2015
DEVELOPER:	Mildred Meza De Díaz
PROJECT:	CONSTRUCTION OF WATER SYSTEM
CODE	2015 - 22

Housing Density Plant	01/08
Plant level Curves	02/08
Pressure Curves plant	03/08
Hydraulic plant	04/08
Hydraulic plant demand	05/08
Home Connection and Counter box	06/08
Detail Valve Box	07/08
Chlorination Booth	08/08

DESCRIPTION

1. BACKGROUND

The municipality of Mazatenango, requested FUNDAZUCAR's collaboration to plan the project "Construction of Water System", for the Community of La Vega of said municipality.

A technical visit was made to learn the feasibility of the Project, determining with the information and data obtained that said project is technically feasible, using it as a base to create the present study.

To meet this request, the topographic survey was carried out with the Foundation's team in September of 2015.

2. DESCRIPTION OF TECHNICAL VISIT

La Vega Community does not have a water system, they are supplied by artesian wells that cover the demand of the entire community.

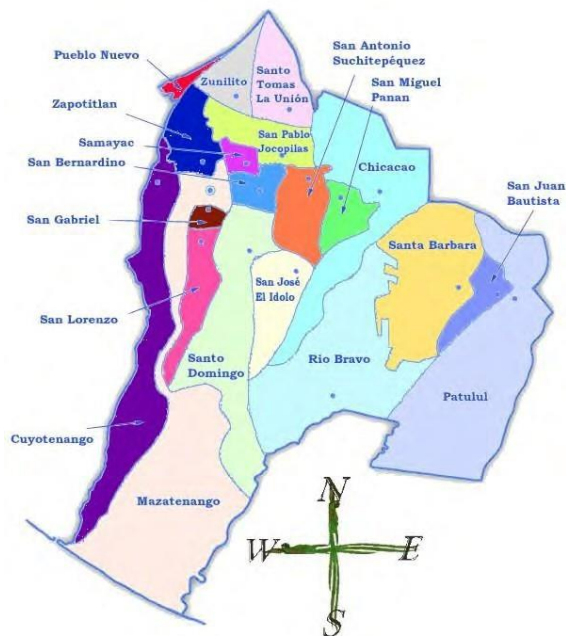
The project includes the drilling of a mechanical well, which will carry the water by pumping to the distribution tank, which must be raised with a tower of 18m and finally will be distributed to each home by the distribution network.

To start planning, the surveying crew that completed the survey required for the design of the construction of the Water System was sent out.

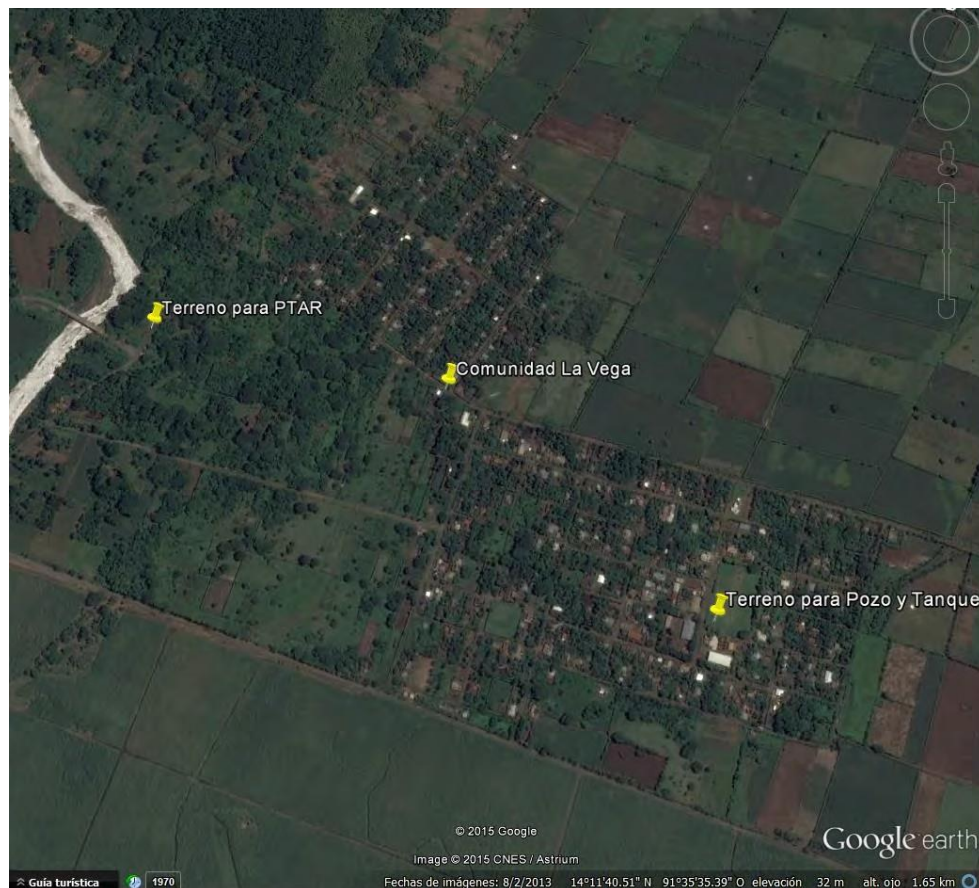
2.1. Location

The municipality of Mazatenango is located in the western central part of the department of Suchitepéquez, and is the departmental capital. It is bounded on the North with San Francisco Zapotitlán and Samayac; to the South with the Pacific Ocean; to the East with Santo Domingo, San Lorenzo, San Gabriel and San Bernardino and to the West with Cuyotenango, all of which are part of the department of Suchitepéquez

It is located at latitude 14° 32' 04" north and 91° 30' 10 west and has an altitude of 375m above sea level. The distance from this departmental capital to the capital city is 160 kilometers.



The La Vega Community is located approximately 2 hours from the municipality of Mazatenango. This community has approximately 305 homes and 1,220 inhabitants. Its geographical coordinates are: 14 ° 11'40.54 "N, 91 ° 35'34.13" W.



2.2. Justification of Project

Due to the fact that they currently do not have any system, the community has presented their project before the municipality of Mazatenango, proposing to provide the service, the drilling of a well for the source, pumping and chlorination booth, drive line, elevated distribution tank and distribution network.

3. COMMUNITY ANALYSIS

There is well-defined community, which helps justifying the implementation of a suitable water system. The topography of the community consists of flat slopes, therefore it will be necessary to place a tower 18m tall at the distribution tank to create a better distribution network.

4. DESCRIPTION OF PROJECT

They have land for drilling the well and plan to extract the water by pumping it to an elevated tank. Although the tank would be built within the same terrain and the drive line would be very small, a 160PSI PVC should be used in order to comply with the UNEPAR guidelines in pressures and speeds.

The distribution network will use PVC tubing of 160PSI, with the capacity to distribute the water of the distribution tank to the current and future homes; home connection and counter installation were included to regulate the use of water for current homes.

It will be the responsibility of members in the local committee to ensure compliance and appropriate use of water of each user, exclusively for domestic use, and punish those who fail to comply or do not pay the fee.

4.1 Design Data

For the design of the water system the following parameters were considered:

TIPO DE ABASTECIMIENTO	BOMBEO		octubre - 2015
Viviendas Actuales (viv)	305	No. Lotes	30
Densidad de Vivienda (hab/viv)	4	No. de Escuelas	1
Población Actual (hab)	1,340	No. de Iglesias	5
Tasa de Crecimiento (%)	3.38	Viviendas Futuras (viv)	702
Periodo de diseño (años)	22	Población Futura (hab)	2,784
Aforo en conjunto (L/s)	5	Caudal Medio Qm (L/s)	3.75
Dotación (L/hab/día)	115	Caudal Máximo Diario - CMD (L/s)	4.502
		Caudal Máximo Horario - CMH (L/s)	7.504
Factor Máximo Diario - FMD	1.2	Tanque Distribucion Calculado (m³)	129.66
Factor Máximo Horario - FMH	2	Deficit de Almacenamiento (m³)	129.66
		Tanque Distribución Recomendado(m³) 12año	90
% para calcular Vol. en T.D.	40	Tanque Distribución Recomendado(m³) 22año	40
Tanque de Distribución Existente (m³)	0		

4.2 Design Time Frame

A project life of 22 years is estimated, starting in 2016, the year that the system is expected to start operating. This is accounting for 1 year of management and 1 year of execution.

4.3 Population

An estimated population rate for urban population of 3.38% was used, according to the growth rate for the municipality according to the INE (National Institute of Statistics).

Year	La Vega	
2016	1,340 Inhabitants	335 Residences
2046	2,784 Inhabitants	702 Residences

4.4 Sources

The community will be supplied with water through the drilling of a mechanical well that will be located in the E-1 station, with a ground level of 99.34. According to the design, the minimum necessary capacity should be 5 liters / second (79.25GPM).

4.5 Type of System

Because the source is through the drilling of a mechanical well, it will be driven from the well to the distribution tank (elevated + 18m tower) by a pumping system.

4.6 Allotment

An allotment of 115 liters / inhab / day (liters per inhabitant per day) was adopted. For the climate, customs of the population and quantity of housing.

4.7 Daily Average Consumption

$Q_m = 3.75$ Lts/sec (liters per second).

4.8 Pumping Flow

The production of the well must be 6.70 lts/sec (liters per second) or 106.20 gpm (gallons per minute).

4.8 Pumping Period

The pumping of the mechanical well to the distribution tank will be 12 hours, driving a flow of 6.70 lts/sec, for which a pump with 15HP power is needed, during the first 12 years. Then it will always be the same power of the pump but in 16.5 hours.

4.9 Disinfection

Disinfection is necessary and obligatory to prevent the proliferation of intestinal diseases. A Pentair brand of in-line dosing will be used for chlorine tablets (without electrical current). They will be placed in the inlet of the pipe to the tank, to take advantage of the speed and thus to make a homogeneous mixture.

4.10 Drive Line

The drive line will have a length of 59.36 ml (linear meters), with PVC pipes of 10".

4.11 Distribution or Storage Tank

The storage or distribution tank will have the capacity to store approximately 90 m³ and must be elevated due to the topography of the community. Plus an 18m high tower. It will be located at the E-1 station of the topographic survey. It is recommended that after 12 years another elevated tank with a capacity of 40m³ be constructed to cover all homes. The outlet pipe of the storage tank must be fitted with a pass-through valve to better control the distribution in the system.

4.12 Distribution Network

The distribution network will have a length of 7,400.96 ml (linear meters), with PVC pipes of 10", 8", 6", 4", 3", 2½", 2", 1½", 1¼" and 1" of 160PSI respectively. Which will drive the QHM (maximum hour flow) of 7.504 lt/sec using FHM = 2 (maximum hour factor). The pipe will be buried in a ditch of 0.60 x 0.80 m in places where no vehicle passes, otherwise it must be buried 1.20 m, to protect the pipe.

4.13 Control Valves

For control and sectorization of the distribution network, whether for repairs, or adding new home connections, it is intended to place 7 control valves between the stations 5-16, 6-47, 9-42, 9-8, 16-22, 49-53 and 42-63.

4.14 Home Connections

There will be 305 home connections and cover 100% of the current housing of the sectors to be catered for. Having houses, schools and churches.

5. UNIT COSTS

	Descripción	Cantidad	Unidad	Precio/unidad	TOTAL RENGLÓN
I)	SISTEMA BOMBEO	1	Unidad	Q 62,560.00	Q 62,560.00
II)	DESINFECCIÓN	1	Unidad	Q 12,500.00	Q 12,500.00
III)	CASETA DE BOMBEO Y DESINFECCIÓN	1	Unidad	Q 31,129.85	Q 31,129.85
IV)	LÍNEA DE IMPULSIÓN	60	ml	Q 1,029.77	Q 61,786.00
V)	TANQUE DE ELEVADO DE 90M3	1	Unidad	Q 752,099.94	Q 752,099.94
VI)	LÍNEA DE DISTRIBUCIÓN	7,302	ml	Q 106.06	Q 774,419.30
VII)	CAJAS PARA VÁLVULAS	7	U	Q 2,289.16	Q 16,024.15
VIII)	CONEXIONES DOMICILIARES	305	Unidad	Q 775.83	Q 236,628.60
					Q 1,947,147.84

The total direct cost of the project amounts to about one million nine hundred and forty-seven thousand one hundred and forty-seven quetzals with 84/100. (Q.1,947,147.84) in which only the direct expenses of the work are included. This cost does not include technical supervision, field administration, I.G.S.S. quota, employment benefits, etc.

6. COST/ BENEFIT

The total cost of the project divided by the number of home connections is equal to six thousand three hundred and eighty-four quetzals with 09/100 (Q.6,384.09).

APPENDIX



FUNDACIÓN DEL AZÚCAR
5a avenida 5-55 zona 14
Edificio Europlaza Torre 3, Nivel 17
PBX: 2386-2199





DESIGN BASES



WATER SYSTEM CONSTRUCTION Community La Vega, Mazatenango, Suchitepéquez

TYPE OF SUPPLY

PUMPING

October-2015

Current Housing (VIV)	305
Housing density (HAB/Viv)	4
Current population (hab)	1,340
Growth rate (%)	3.38
Design Period (years)	22
Overall capacity (L/s)	5
Endowment (L/HAB/day)	115

No. Lots	30
No. of Schools	1
No. of Churches	5
Future Housing (VIV)	702
Future population (hab)	2,784
Qm average flow (L/s)	3.75
Maximum Flow Daily-CMD (L/s)	4.502
Maximum flow Time-CMH (L/s)	7.504
Calculated distribution Tank (m³)	129.66
Storage Deficit (m³)	129.66
Recommended distribution tank (m³) 12 years	90
Recommended distribution tank (m³) 22years	40

Factor Maximum Daily – FMD	1.2
Factor Maximum Hourly – FMH	2
% for calculating Volume of Distribution Tank	40
Existing Distribution Tank (m³)	0



WATER SYSTEM CONSTRUCTION Community La Vega, Mazatenango, Suchitepéquez



TOTAL DYNAMIC LOAD

October-2015

PUMPING DATA	
Design period (years) pump	22.00
Future population (hab) at 22 years	2,784
Q Medium to 22 years	3.84
Q día Max to 22 years	4.61
Pumping hours	16.50
Pumping Flow Qb in (L/s)	6.70
Pumping Flow Qb in (Gal/min)	106.20
Pipe Speed Impulse	0.70
Pipe Speed Well	0.72
Suction Tank *	175.13
TOPOGRAPHICAL DATA	
Natural terrain Elevation	98.49
Elevation arrival floor Tank Dist.	116.49
Tank useful Height	6.00
N.E. Depth (m)	25.49
Depth N.D. (m)	25.49
Long. Driving Line (m)	24.00

DYNAMIC LOAD LINE IMPULSE	
Length Pipe Drive-Vertical (MT)	24.00
Length Drive-Horizontal tubing (MT)	24.00
Total Length Drive	48.00
H-W coefficient pipe Impulse	90.00
Speed Piping Drive impulse (m/s)	0.70
Lost Piping Drive (MT)	0.53
Minor K-Lost constants	5.10
Singular losses Pipe Drive (MT)	0.13
Dynamic load Impulse Line (MT)	24.68
DYNAMIC LOAD IMPULSE LINE (MT)	
Length Suction-Vertical tubing	73.00
H-W coefficient tubing suction HG TM	90.00
Speed Pipe Drive Suction	0.72
Leaking suction pipe	0.86
Minor K-Lost constants	12.81
Singular losses pipe suction	0.34
Dynamic load Suction Line (MT)	74.20
TOTAL DYNAMIC LOAD	100.88

TYPE OF PIPE IN IMPULSE		HG
BS-1387, LIGHT		
	TL	
Diameter (v = 0.6 m/s)		4.70
Diameter (v = 2.0 m/s)		2.57
Diametro economico		3.81
Diameter to be used		4.70
Inside diameter to be used		4.36
Pipe thickness		0.14

TYPE OF PIPE IN WELL		HG
BS-1387, MEDIUM		
	TM	
Diameter (v = 0.6 m/s)		4.70
Diameter (v = 2.0 m/s)		2.57
Economic diameter		3.81
Diameter to be used		4.70
Inside diameter to be used		4.2876
Pipe thickness		0.16

HAMMER STRIKE CALCULATION	
Modulus of elasticity impulse (kg/cm ²)	2050000
Modulus of elasticity well (kg/cm ²)	2050000
Celerity (m/s) Impulse	1242.92
Celerity (m/s) Well	1272.12
Over pressure by water hammer (M.W.C.) I	88.32
Over pressure by water hammer (M.W.C.) P	93.25
Check Pipe Impulse	116.17
Check pipe Well	194.14
Critical Time Closed Valves	0.08
POTENICA PUMP	
Pump efficiency	0.60
Pump Power (KW)	14.82
Recommended pump Power (KW)	15.00
PDT with recommended Power (M.W.C.)	102.09
Recommended pump power 12 years (KW)	15.00
At age 12, pumping hours	12.00
INITIAL PIEZOMETRIC DIMENSION	127.57

Line Item Budget



FUNDACIÓN DEL AZÚCAR
5a avenida 5-55 zona 14
Edificio Europlaza Torre 3, Nivel 17
PBX: 2386-2199



BUDGET

District: Suchitepéquez

Municipality: Mazatenango

Community: La Vega

Design: Mildred Meza

CUANTIFICO: Mildred Meza

Date: 9/1/2018

Project: PI-2015-22

CONSTRUCTION OF THE WATER SYSTEM, LA VEGA COMMUNITY, MAZATENANGO, SUCHITEPÉQUEZ

	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
I.	Drill Well	500	ft	879.40		439,700.00
	A) Work Force/Labor					339,600.00
a.1	Assemble & dismantling of the drill rig	1	ls	3,500.00	3,500.00	
a.2	Perforation of an 8" diameter pipe	500	ft	600.00	300,000.00	
a.3	Install 8" well casing	500	ft	20.00	10,000.00	
a.4	Development and cleaning of the well	30	hr	320.00	9,600.00	
a.5	Pumping, assembling and dismantling test	1	ls	16,500.00	16,500.00	
	B) Equipment and Accessories					95,100.00
b.1	8" Well casing pipe (solid)	260	ft	165.00	42,900.00	
b.2	8" Well casing pipe (perforated)	240	ft	180.00	43,200.00	
b.3	Gravel filter, material, transport and installation	1	ls	6,000.00	6,000.00	
b.4	Cement sanitary seal	1	ls	3,000.00	3,000.00	
	C) Shipping	1	ls	5,000.00	5,000.00	5,000.00
II.	PUMP SYSTEM	1	U	62,560.00		62,560.00
	A) Work Force/Labor					4,700.00
a.1	Frame and assemble the switchboard, connect electricity and start	1	ls	1000.00	1,000.00	
a.2	Crane to install pump in the well	1	ls	3500.00	3,500.00	
a.3	Joints	1	ls	200.00	200.00	
	B) Equipment and Accessories					56,860.00
b.1	Submersible Pump: Warson model 7T30-350 de 5 etapas de bonce con motor sumergible Franklin 15HP/460V/3PH/3450RPM/60HZ.	1	ea	27560.00	27,560.00	
b.2	Metal cabinet for controls	1	ea	900.00	900.00	
b.3	Security switch	1	ea	1000.00	1,000.00	
b.4	Pump starter	1	ea	1600.00	1,600.00	
b.5	Phase protector	1	ea	1200.00	1,200.00	
b.6	Lightning Rod	1	ea	400.00	400.00	
b.7	Pilot light & on/off	1	ea	200.00	200.00	
b.8	300 ft of cable double lining	300	ft	14.33	4,299.00	
b.9	300 pies de piezómetro de 1/4" piezometer	300	ft	1.17	351.00	

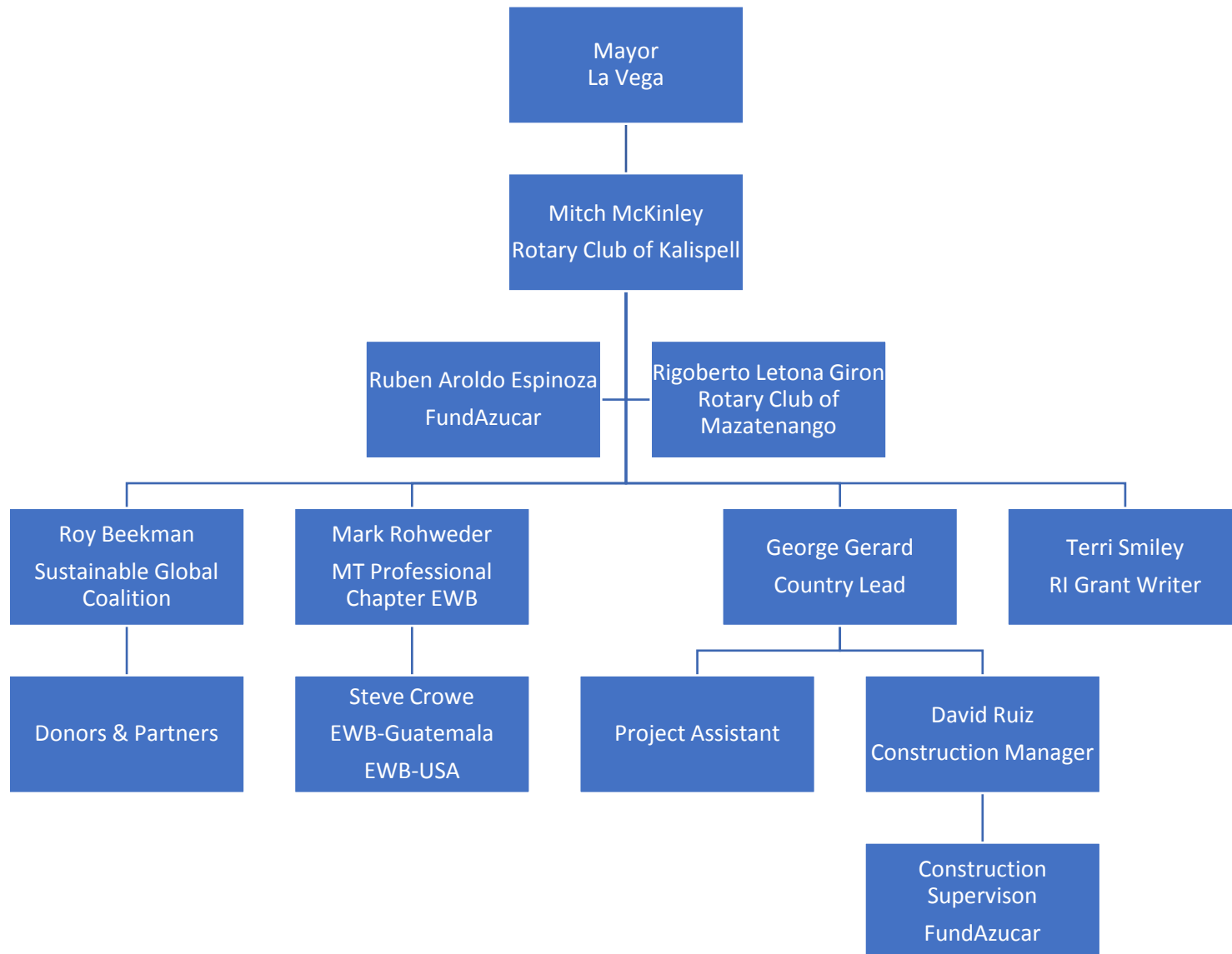
b.10	14 galvanized tubes (4" galvanized)	14	ea	1114.29	15,600.00	
b.11	Sanitary seal	1	ea	250.00	250.00	
b.12	4" Support collar	1	ea	400.00	400.00	
b.13	4" Check Valve	1	ea	1600.00	1,600.00	
b.14	Discharge manifold	1	ea	600.00	600.00	
b.15	Cooling case	1	ea	600.00	600.00	
b.16	Electrical assembly	1	ls	300.00	300.00	
	C) Shipping					1,000.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
III.	DISINFECTION	1	U	12,500.00		12,500.00
a.1	Chlorination System: Sistema automático de clorificación que incluye undosificador electrónico marca PULSAtron Serie C Plus de 30 GPD y 80 PSI, un convertidor decorriente 220V/110V para el arranque automático del dosificador, un deposito de 60 galones tipo barril de polietileno, 60 galones de cloro tipo "B" 5%, 1 kit para medición de cloro y ph, instalación, asesoría y diseño.	1	ea	12,500.00	12500.00	12,500.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
IV.	BUILDING HOUSING PUMP AND DISINFECTION UNIT	1	U	34,297.85		34,297.85
	A) Work Force/Labor					16,053.85
a.1	Staking	11.9	ml	5	59.50	
a.2	leveling	8.85	m2	5	44.25	
a.3	raise block wall	27.3	m2	50	1,365.00	
a.4	Foundation	11.9	ml	50	595.00	
a.5	foundation columns	28.7	ml	50	1,435.00	
a.6	foundation slab	87	ml	50	4,350.00	
a.7	Wood Formwork	115.7	ml	25	2,892.50	
a.8	Wood Formwork walls	27.3	m2	25	682.50	
a.9	Removing wood Formwork	115.7	ml	15	1,735.50	
a.10	Removing wall wood Formwork	27.3	m2	15	409.50	
a.11	excavation	2.8	m3	60	168.00	
a.12	Armado	271.7	ml	3	815.10	
a.13	Hacer estribos No.2 (Ø ¼") Rebar	515	ea	1	515.00	
a.14	Hacer eslabón No.2 (Ø ¼") Rebar	637	ea	1	637.00	
a.15	Install Sheet	8	ea	25	200.00	
a.16	install window	1	ea	100	100.00	
a.17	install metal door	1	ea	50	50.00	
	B) Construction materials					17,744.00
b.1	river sand	2.75	m3	180	495.00	
b.2	stone	1.75	m3	200	350.00	
b.3	select material	1	m3	200	200.00	
b.4	Block 0.15 X 0.20 X 0.40	341	ea	9	3,069.00	
b.5	grey cement	48	bags	80	3,840.00	
b.6	rebar No. 2 (Ø ¼")	2	qq	500	1,000.00	
b.7	rebar No. 3 (Ø 3/8")	4	qq	500	2,000.00	

b.8	mooring wire	38	lb	7.5	285.00	
b.9	nails 1 1/2" and 2 1/2"	6	lb	7.5	45.00	
b.10	Lumber 2" X 4" X 12'	3	ea	350	1,050.00	
b.11	Plywood P-10 (6')	10	ea	155	1,550.00	
b.12	screws 5½" X ¼"	38	ea	5	190.00	
b.13	Wood 1' X 6' X 3/4"	32	ea	60	1,920.00	
b.14	metal door	1	ea	1,100.00	1,100.00	
b.15	window	1	ea	650	650.00	
	C) Shipping					500.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
V.	Line from Pump to Tank	60	ml	358.19		21,491.40
	A) Work Force/Labor					3,355.00
a.1	clean/sanitize	30	m2	5	150.00	
a.2	Staking	60	ml	5	300.00	
a.3	excavation	36	m3	60	2,160.00	
a.4	fill	33	m3	15	495.00	
a.5	installation of pipe	10	ea	25	250.00	
	B) Pipe and Accessories					17,636.60
b.1	Pipe Ø 10" PVC 160 PSI	10	tubes	1,601.20	16,012.00	
b.2	Elbow PVC Ø10"x45°	2	ea	462.30	924.60	
b.3	Elbow PVC Ø10"x90°	2	ea	350.00	700.00	
	C) Shipping					500.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
VI.	Elevated 90 cubic meter Tank	1	U	676,890.00		676,890.00
	Elevated metal tank with 4 bases of concrete 18 meter high					
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
VII.	Distribution Line	7,404	ml	99.95		740,029.80
	A) Work Force/Labor					328,940.50
a.1	clean/sanitize	3,702	m2	5	18,510.00	
a.2	Staking	7,404	ml	5	37,020.00	
a.3	excavation	3,554.00	m3	60	213,240.00	
a.4	fill	1,954.70	m3	15	29,320.50	
a.5	installation of pipe	1,234	m	25	30,850.00	
	B) Pipe and Accessories					331,068.90
b.1	Pipe Ø 1" PVC 160 PSI	207	tubes	53.2	11,012.40	
b.2	Pipe Ø 1 1/4" PVC 160 PSI	38	tubes	68.3	2,595.40	
b.3	Pipe Ø 1 1/2" PVC 160 PSI	385	tubes	94.2	36,267.00	
b.4	Pipe Ø 2" PVC 160 PSI	178	tubes	143.2	25,489.60	
b.5	Pipe Ø 2 1/2" PVC 160 PSI	64	tubes	210	13,440.00	
b.6	Pipe Ø 3" PVC 160 PSI	165	tubes	307	50,655.00	
b.7	Pipe Ø 4" PVC 160 PSI	151	tubes	501.9	75,786.90	
b.8	Pipe Ø 6" PVC 160 PSI	29	tubes	1,065.20	30,890.80	
b.9	Pipe Ø 8" PVC 160 PSI	4	tubes	1,868.50	7,474.00	
b.10	Pipe Ø 10" PVC 160 PSI	13	tubes	3,376.80	43,898.40	
b.11	gate valve Ø 3" BR	3	ea	730	2,190.00	
b.12	gate valve Ø 4" BR	3	ea	1,130.00	3,390.00	
b.13	Elbow PVC Ø10"x45°	1	ea	4,305.10	4,305.10	
b.14	Elbow PVC Ø1"x90°	1	ea	5.5	5.50	

b.15	Elbow PVC Ø1 ½"x90°	3	ea	7.7	23.10	
b.16	Elbow PVC Ø3"x90°	1	ea	60	60.00	
b.17	Elbow PVC Ø4"x90°	1	ea	73.7	73.70	
b.18	Cross PVC Ø1½"	5	ea	36.2	181.00	
b.19	Cross PVC Ø2"	1	ea	52.4	52.40	
b.20	Cross PVC Ø2½"	2	ea	153.3	306.60	
b.21	Cross PVC Ø3"	1	ea	194.9	194.90	
b.22	Cross PVC Ø4"	2	ea	288.2	576.40	
b.23	Cross PVC Ø8"	1	ea	611	611.00	
b.24	Reducer PVC Ø1½"x1"	9	ea	6.5	58.50	
b.25	Reducer PVC Ø2"x1"	1	ea	8.8	8.80	
b.26	Reducer PVC Ø2"x1½"	9	ea	8.8	79.20	
b.27	Reducer PVC Ø2½"x1¼"	1	ea	28.4	28.40	
b.28	Reducer PVC Ø2½"x1½"	6	ea	28.4	170.40	
b.29	Reducer PVC Ø2½"x2"	5	ea	28.4	142.00	
b.30	Reducer PVC Ø3"x1"	1	ea	40.3	40.30	
b.31	Reducer PVC Ø3"x1½"	1	ea	40.3	40.30	
b.32	Reducer PVC Ø3"x2"	4	ea	40.3	161.20	
b.33	Reducer PVC Ø3"x2½"	4	ea	40.3	161.20	
b.34	Reducer PVC Ø4"x2"	1	ea	64.2	64.20	
b.35	Reducer PVC Ø4"x2½"	1	ea	64.2	64.20	
b.36	Reducer PVC Ø4"x3"	4	ea	64.2	256.80	
b.37	Reducer PVC Ø6"x3"	1	ea	219.6	219.60	
b.38	Reducer PVC Ø6"x4"	2	ea	219.6	439.20	
b.39	Reducer PVC Ø8"x4"	1	ea	770.70	770.70	
b.40	Reducer PVC Ø8"x6"	2	ea	770.70	1,541.40	
b.41	Reducer PVC Ø10"x6"	1	ea	3,325.60	3,325.60	
b.42	Reducer PVC Ø10"x8"	1	ea	3,325.60	3,325.60	
b.43	Plug PVC Ø 1"	8	ea	3.2	25.60	
b.44	Plug PVC Ø 1¼"	1	ea	4.4	4.40	
b.45	Plug PVC Ø 1½"	1	ea	5.4	5.40	
b.46	Tee PVC Ø1"	3	ea	5.5	16.50	
b.47	Tee PVC Ø1½"	10	ea	15.2	152.00	
b.48	Tee PVC Ø2"	5	ea	16.7	83.50	
b.49	Tee PVC Ø2½"	1	ea	56.1	56.10	
b.50	Tee PVC Ø3"	8	ea	68.5	548.00	
b.51	Tee PVC Ø4"	4	ea	113.8	455.20	
b.52	Tee PVC Ø10"	1	ea	8,386.10	8,386.10	
b.53	Reducer tee PVC Ø2½"x1½"	1	ea	90	90.00	
b.54	Reducer tee PVC Ø6"x4"	1	ea	869.30	869.30	
	C) Shipping	160	ea	500	80000.00	80,000.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
VIII.	VALVE BOXES	7	U	2,383.71		16,685.97
	A) Work Force/Labor					4,055.05
a.1	sanitize	15.75	m2	5	78.75	
a.2	Staking	15.75	m2	5	78.75	
a.3	leveling	15.75	m2	5	78.75	
a.4	Excavation and disposal of material	7.00	m3	60	420.00	
a.5	Foundation	2.10	m3	500	1,050.00	

a.6	Wood Formwork	18.00	m2	25	450.00	
a.7	Removing wood Formwork	18.00	m2	15	270.00	
a.8	Armado No.3	1548	octavos	0.6	928.80	
a.9	Hydraulic Installation	7	ea	100	700.00	
	B) Pipe and Accessories					1,575.00
b.1	Stainless steel chasing 3/16"	3.5	ml	30	105.00	
b.2	Battery operated valve Ø 2"	7	ea	60	420.00	
b.3	Weather proof lock	7	ea	150	1,050.00	
	C) Construction materials					10,054.68
c.1	Cement	18	bags	80	1,440.00	
c.2	river sand	1.00	m3	180	180.00	
c.3	stone	1.90	m3	200	380.00	
c.4	Lumber 10'x1'x1"	28	ea	75	2,100.00	
c.5	Beam 8'x3"x3"	42	ea	60	2,520.00	
c.6	Nails 4"	17.82	lb	7.5	133.65	
c.7	rebar No. 3	86	rod	36.7	3,156.20	
c.8	mooring wire	19.31	lb	7.5	144.83	
	D) Shipping	2	ea	500	1000.00	1,000.00
	Description	Quantity	Unit	\$/Unit	Sub-total	Line Item
IX.	Services to Homes	305	U	1032.55		314,927.75
	A) Work Force/Labor					75,446.00
a.1	excavation	878.40	m3	60	52,704.00	
a.2	fill	702.80	m3	15	10,542.00	
a.3	install services	305	ea	20	6,100.00	
a.4	install boxes for service meter	305	ea	20	6,100.00	
	B) Pipe and Accessories					229,481.50
b.1	Pipe Ø ½" PVC class 315 psi	305	tubes	32.9	10,034.50	
b.2	water meter Ø ½" "PacificWater Meters"	305	ea	375	114,375.00	
b.3	box for meter	305	ea	125	38,125.00	
b.4	Ball valve Ø ½" Br	305	ea	47	14,335.00	
b.5	shut-off valve Ø ½" Br	305	ea	34	10,370.00	
b.6	check valve Ø ½" Br	305	ea	57	17,385.00	
b.7	male adapter Ø ½" PVC	1830	ea	1.3	2,379.00	
b.8	Elbo 90° X diam. ½" PVC	305	ea	2.6	793.00	
b.9	Hose clamp PVC 2" Øx ½"	40	ea	89.1	3,564.00	
b.11	Clamp PVC 3" Øx ½"	41	ea	121.9	4,997.90	
b.12	Clamp PVC 4" Øx ½"	45	ea	125.8	5,661.00	
b.13	Clamp PVC 6" Øx ½"	4	ea	303.4	1,213.60	
b.14	Clamp PVC 8" Øx ½"	1	ea	399	399.00	
b.16	Reducer bushing PVC Ø 1" x ½"	64	ea	3.7	236.80	
b.17	Reducer bushing PVC Ø 1¼" x ½"	10	ea	5.4	54.00	
b.18	Reducer bushing PVC Ø 1½" x ½"	91	ea	6.5	591.50	
b.19	Reducer bushing PVC Ø 2½" x ½"	9	ea	28.4	255.60	
b.20	Reducer bushing PVC Ø10" x8"	1	ea	3,325.60	3,325.60	
b.21	Solvent for cement	3	gal	462	1,386.00	
	C) Shipping	20	ea	500	10000.00	10,000.00
				Grand Total (Quetzals)		2,319,061.08
				Grand Total (US\$) \$		306,754.11

LA VEGA PROJECT ORGANIZATIONAL CHART AND ROLES



LA VEGA PROJECT ORGANIZATIONAL CHART AND ROLES

Proposed Roles

Community of La Vega

- Create committees and meet committee requirements as set forth by Rotary International under the Global Grant
- Provide monetary and/or in-kind donations of materials and labor.
- Provide timely information and updates to Fundazucar and the Rotary Club of Mazatenango as the project progresses. The information and updates are vital to successfully implement the project and meet Global Grant requirements.

Rotary Club of Kalispell

- Project lead
- Coordinate between all partners
- Submit Global Grant
- Administer Global Grant
- Fundraise

FundAzucar

- Provide training to the community of La Vega on Governance and Health & Hygiene
- Supervise Onsite Construction: visit site regularly to observe and answer questions and provide updates on the progress.
- Assist community create committees required by the Global Grant

Rotary Club of Mazatenango

- Administration and oversight of project funds once deposited in Guatemalan Bank.
- Communicate regularly with the community of La Vega and help provide required information for the Global Grant application and administration of the grant.
- Logistical support to partners (Rotary Clubs) before, during, and after construction.
- Monetary support

Sustainable Global Coalition

- Monetary support
- Logistical support from membership to manage partners and donors
- Fundraise

LA VEGA PROJECT ORGANIZATIONAL CHART AND ROLES

- Assist in managing partners and donors

Engineers without Borders (EWB): Montana Professional Chapter and Guatemalan EWB office

- Engineering plan review
- Engineering support and guidance during the design, construction, and operation of the water system
- Logistical and material support

Country Lead

- Provide logistical support
- Coordination with local partners

Project Assistant

- In-country person assisting with pre-construction requirements of the global grant
- Spanish-English translator

Construction Manager

- In-country engineer: provide review and guidance during design, construction, and operation of the water system
- Construction management during major milestones such as initiation of water well drilling, operational start-up, layout
- Verification of purchased materials, quantities, and prices.
- Assist in gathering required information for the administration of the global grant

Rotary International Grant Writer

- Assist the Rotary Club of Kalispell write and submit a global grant application



LA VEGA WATER PROJECT DONOR COMMITMENT FORM

Contributions can also be made at [\[facebook page\]](#)

1. DONOR OF CONTRIBUTION

Type of Donor (Check one): ☐ Individual ☐ Rotary club ☐ Rotaract/Interact club ☐ District ☐ Business

☐ Charitable organization/Foundation ☐ Other: _____

Name: _____ Donor ID: _____

Club Name: _____ Club No.: _____ District No.: _____

Billing Address: _____ City: _____ State/Province: _____

Country: _____ Postal Code: _____

Daytime Phone: _____ Email Address: _____

2. DESIGNATION/PURPOSE:

☐ Approved Foundation grant #1872020

3. COMMITMENT AMOUNT

Amount of contribution _____ Currency _____

4. INDIVIDUAL COMPLETING THIS FORM

Signature: _____

Please mail or email this form.

Mail:

Flathead Rotary Community Foundation
PO Box 481
Kalispell, MT 59903

Email: nwmtcoalition@gmail.com.

For more information or questions regarding this form, please contact Mitch McKinley at (406) 314-8321 or Mark Rohweder at (406) 890-1193.