CITY OF SILVERTON

CITY COUNCIL MEETING AGENDA

Silverton Community Center – Council Chambers – 421 South Water St.

Americans with Disabilities Act – The City of Silverton intends to comply with the A.D.A. The meeting location is accessible to individuals needing special accommodations such as a sign language interpreter, headphones, or other special accommodations for the hearing impaired. To participate, please contact the City Clerk at 503-874-2216 at least 48 hours prior to the meeting.

A copy of the packet and materials, not privileged information under Executive Session Meetings Law, are available for review Monday through Friday 8:00 am to 5:00 pm in the City Manager's Office at the Silverton City Hall, located at 306 South Water Street. All documents will be available on our website at www.silverton.or.us.

Monday, July 17, 2017, 7:00 PM

I. OPENING CEREMONIES – Call To Order, Pledge Of Allegiance & Roll Call

II. APPROVAL OF MINUTES – Minutes from the Work Session held March 13, 2017, Special Meeting held March 13, 2017 and the Regular Meeting held June 5, 2017

III. OATHS OF OFFICE/PUBLIC RECOGNITION – None Scheduled

IV. PUBLIC COMMENT – This is a business meeting of the City Council. The City values and welcomes public input. Please address the Council as a whole and not individual Council Members. Do not address Staff or members of the audience. Council action on items brought up in Public Comment is limited by the Open Meeting Law. The Council may direct Staff to study the matter and reschedule for further consideration at a later date. Items on the agenda will not be heard or discussed during Public Comment, but will be accepted at that place on the Agenda. Individuals are limited to three (3) minutes.

V. SCHEDULED PRESENTATIONS –

5.1 Chamber of Commerce Annual Report

5.2 Presentation on downtown historical plaque placements

VI. PUBLIC HEARING – None Scheduled

VII. CONSENT AGENDA –

7.1 Purchase Award - Authorize Sole Source purchase of water meters

7.2 Approval of 2017-2018 Biosolids Land Application contract extension

7.3 Grant Awards – Silverton Tourism Promotion Committee grant recommendations

VIII. DISCUSSION/ACTION ITEMS –

8.1 2016 Biosolids Dewatering Evaluation

8.2 Resolution No. 17-29 – A resolution of the Silverton City Council adopting the updates to the City of Silverton addendum to the Marion County Multi-Jurisdictional Hazard Mitigation Plan

8.3 Resolution No. 17-30 – A Resolution submitting a five-year local tax for Swimming Pool operation and maintenance

8.4 Discussion and approval of a Purchase and Sale Agreement with the Silver Falls School District of 410 N. Water Street, Silverton, OR (Eugene Field) for the construction of a new Police Facility and Civic Center

8.5 Report on Mass Gathering Permit

8.6 Report on options for controlling deer within the City limits

8.7 Environmental Management Committee policy recommendations

IX. APPOINTMENTS TO COMMITTEES AND ADVISORY GROUPS – None Scheduled

X. COUNCIL DISCUSSION –

10.1 City Manager Update

10.2 Council Communications

XI. EXECUTIVE SESSION – None Scheduled

XII. ADJOURNMENT –

CITY OF SILVERTON

CITY COUNCIL SPECIAL MEETING MINUTES

Silverton Community Center – Council Chambers – 421 South Water St.

March 13, 2017, 5:00 p.m.

I. OPENING CEREMONIES – Call To Order, Pledge Of Allegiance & Roll Call

Mayor Palmer called the Meeting to order at 5:00 p.m.

Present	Absent	
X		Mayor Kyle Palmer
X		Council President Jason Freilinger
	Excused	Jim Sears
X		Matt Plummer
X		Dana Smith
	Excused	Laurie Carter
		Vacant

Staff Present:
City Manager, Christy Wurster; and City Clerk, Lisa Figueroa

II. DISCUSSION/ACTION ITEMS

Mayor Palmer opened the floor for public comment before the Council considered the resolutions.

Constance Yoder, 630 Schemmel Lane, stated she supports the resolutions.

2.1 Resolution No. 17-14 and Resolution No. 17-15 – Regarding the availability of healthcare to everyone in Oregon

Councilor Freilinger provided background information. Councilor Freilinger moved to approve Resolution No. 17-14. Councilor Smith seconded the motion. Councilor Smith recommended the word 'design' be replaced with the word 'develop'.

The Council considered the resolutions. Councilor Freilinger amended his motion to include the recommended amendment. Councilor Smith seconded the amended motion. After further discussion, the amended motion carried as follows:

Aye: Matt Plummer
Dana Smith
Kyle Palmer
Jason Freilinger
Absent: Laurie Carter
Jim Sears

Councilor Freilinger moved to approve Resolution No. 17-15. Councilor Plummer seconded the motion.

There were concerns to pass this Resolution without the full Council and questioned whether it was urgent to pass this resolution, but determined it would be ok to pass it. After further discussion the motion carried as follows:

Aye: Matt Plummer
Dana Smith
Kyle Palmer
Jason Freilinger
Absent: Laurie Carter
Jim Sears

III. ADJOURNMENT

The Meeting adjourned at 5:14 p.m.

Respectfully Submitted By:

/s/Lisa Figueroa, City Clerk

CITY OF SILVERTON

CITY COUNCIL WORK SESSION MINUTES

Silverton Community Center – Council Chambers – 421 South Water St.

March 13, 2017, 5:15 p.m.

I. OPENING CEREMONIES – Call To Order, Pledge Of Allegiance & Roll Call

Mayor Palmer called the Work Session to order at 5:15 p.m.

Present	Absent	
X		Mayor Kyle Palmer
X		Council President Jason Freilinger
	Excused	Jim Sears
X		Matt Plummer
X		Dana Smith
	Excused	Laurie Carter
		Vacant

Staff Present:
City Manager, Christy Wurster; and City Clerk, Lisa Figueroa

II. DISCUSSION/ACTION ITEMS

2.1 Develop Fiscal Year 2017-2018 goals and objectives

Mid-Willamette Valley Council of Governments (COG), Acting Executive Director, Nancy Boyer, reviewed the goals discussed from the February 27 Work Session. Councilor Freilinger mentioned island communities are planned at the north and west side of town and inquired how the City will provide connection through the community. The Council determined it should be an objective under a goal.

Ms. Boyer suggested the Council create goals that may be carried over year to year, with objectives to be completed each year accomplishing those goals.

The Council proceeded through the goals and included the following objectives:

- 3.1 Continue planning for and build new police station within five years, with plans to incorporate City Hall within ten years
- 3.2 Finalize the updated Transportation Master Plan and begin implementation
- 3.3 Perform SDC analysis and rate studies as appropriate
- 3.4 Identify funding strategy and implement island infill infrastructure to provide connectivity (sidewalks, bike paths, street lights and stormwater)
- 3.5 Complete Old Mill Park improvements
- 3.6 Update street signage in compliance with MUTCD requirements
- 3.7 Install 100% radio read water meters within three (3) years

The Council considered whether the pool should be included in this goal and it was agreed to include it under a separate parks and recreation goal. Councilor Plummer said he would like to see a specific reference to safe routes to schools. The Council determined it should be an infrastructure issue.

- 3.8 All major residential areas to be connected for safe travel (streetlights, sidewalks, and bike lanes/paths) to schools and downtown
- 3.9 Reconstruct McClaine Street
- 3.10 Improve South Water Street
- 3.11 Complete the physical assessment of the pool
- 3.12 Improve Second Street between the railroad tracks towards Jefferson Street
- 3.13 Use the Northside Addition as a focus area to create a model to assess overall improvements needed, create a cost analysis, provide funding options to move forward and use that model in other areas of Silverton

Councilor Freilinger said Goals 6 and 7 can be combined. The Council changed it Goal 4 –To implement policies and programs to maintain safety and quality of life.

- 4.1 Develop strategies for affordable housing
- 4.2 Consider regulations to allow for gray water irrigation systems 6.4 grey water
- 4.3 Consider smoke-free areas, plastic shopping bags/food grade Styrofoam ban, and commercial composting
- 4.4 Consider expansion of utility bill assistance program
- 4.5 Continue emergency preparedness outreach

There was discussion about Silverton being Oregon Garden's City while promoting water conservation in the community.

The Council decided Goal 5 - Effective/Efficient government should read, Goal 5 – Provide Efficient and Fiscally Sound Municipal Services.

- 5.1 Update long range financial plan

City Manager Wurster updated the Council on the status of the current Pool Levy, the timeline of sending it to the ballot in November 2017 versus May 2018 and whether to proceed with an assessment of the Pool this fiscal year. The Council indicated the assessment should be completed in this fiscal year since the money is available.

- 5.2 Prepare renewal pool operations and maintenance levy for November ballot
- 5.3 Assess the practicality of a Parks and Recreation District

City Manager Wurster questioned whether the Council wants to spend the money to establish a Parks and Recreation District and then hand off the district to another entity after the City has completed capital improvement projects to those facilities. The Council indicated those projects need to be completed regardless of the outcome. There was discussion about whether Old Mill Park should be included in the objectives. Councilor Freilinger said he would like to see it through since it is a work in project and there were no objections.

III. ADJOURNMENT

The Meeting adjourned at 7:28 p.m.

Respectfully Submitted By:

/s/Lisa Figueroa, City Clerk

CITY OF SILVERTON

CITY COUNCIL MINUTES

Silverton Community Center – Council Chambers – 421 South Water St.

June 5, 2017, 7:00 PM

I. OPENING CEREMONIES – Call To Order, Pledge Of Allegiance & Roll Call

Mayor Palmer called the Meeting to order at 7:00 p.m.

Present	Absent	
		Mayor
X		Kyle Palmer
		Council President
X		Jason Freilinger
X		Jim Sears
X		Matt Plummer
X		Dana Smith
X		Laurie Carter
X		Rhett Martin

Staff Present:
City Manager, Christy Wurster; Chief of Police, Jeff Fossholm; Public Works Director, Christian Saxe; Community Development Director, Jason Gottgetreu; Administrative Services Director, Dianne Hunt; and City Clerk, Lisa Figueroa

II. APPROVAL OF MINUTES

Councilor Smith moved to approve the Minutes of the Meeting held on May 1, 2017 as presented. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin

Nay: None

III. OATHS OF OFFICE/PUBLIC RECOGNITION

There were none scheduled.

IV. PUBLIC COMMENT –

Becky Ludden, representative of the Silverton Garden Club, announced the Silverton Garden Tour will be held on June 10, 2017 from 10:00 a.m. to 4:00 p.m. She said tickets are on sale for $15 online at www.silvertontogether.org.

V. SCHEDULED PRESENTATIONS –

5.1 Chamber Of Commerce Monthly Report

Executive Director Stacy Palmer provided the monthly report. She said contacts are increasing and the Business Retention & Expansion survey deadline has been extended. She listed upcoming events and noted the hanging flower baskets are downtown now. She said the Chamber is working with local businesses to increase business traffic for First Friday. She indicated the downtown parking group will meet soon and she will provide an update to the Council at the next meeting.

5.2 HEAL Cities presentation

Administrative Services Director (ASD), Dianne Hunt provided a report to the Council. She said there are three policies in the HEAL Cities program:

- Internal structure
- Food programs
- Land use policies

ASD Hunt said as part of the Transportation System Plan update, there will be more bicycle and pedestrian connectivity planned throughout the City. She noted local events promoting food programs such as the Saturday Farmers Market and a Farm2Table event in September 2017. She said the City is working with the Oregon Department of Transportation (ODOT) to develop James and Jefferson Streets as a safe route to Silverton schools. She indicated there is an extended employee wellness policy which recognizes employee wellness. She noted the City refurbished two bicycles, which are available to City employees for City business or personal use.

Councilor Plummer said he spoke with the new Executive Director of the HEAL Campaign, who noted there are about 39 cities involved in the Campaign, and Silverton is a level two of four. The Council discussed the possibilities of the program, but did not ask for any follow up.

VI. PUBLIC HEARING

6.1 Ordinance No. 17-07 – Public Hearing for a Comprehensive Plan Map Amendment to Designate 608 North James Street Multiple Family Residential with a Concurrent Zone Change to Zone the Property Multiple Family Residential RM-10

Mayor Palmer opened the Public Hearing at 7:31 p.m. and asked if any Councilors wish to abstain, declare any conflicts of interest or ex-parte contacts. Councilor Freilinger indicated he saw conversations on social media but did not participate in them and stated it would not have any bearing on his ability to render an impartial decision. Mayor Palmer said he was approached by community members but indicated he could not speak on the matter; he stated he felt it would not affect his ability to make an impartial decision. Councilor Smith said she was approached by community members and indicated she could only listen to their comments; she stated it would have no bearing on her ability to make an impartial decision.

Community Development Director Jason Gottgetreu provided a staff report. He said the request is a Comprehensive Plan Map amendment to designate 608 N. James Street Multiple-Family Residential with a concurrent Zone Change to zone the property Multiple-Family Residential (RM-10). He said the site has frontage on North James Street and Jefferson Street, a collector roadways under Marion County jurisdiction. He stated the Planning Commission evaluated the proposal against relevant comprehensive plan policies and found that the project is less supportive of the Comprehensive Plan as a whole. He said a Traffic Impact Analysis (TIA) was submitted and summarized the report. He said the Planning Commission recommended the City Council deny the application because it does not meet the review criteria for such change.

Applicant Testimony:
Gene Oster, 6182 Cascade Highway; addressed the Council. He referenced page 102 and 103, where the Comprehensive Plan refers to growth, implied the City is out of housing and said there is no definition of 'corridor'. He said the City is short of all types of houses. The Council asked clarification questions.

Public testimony
Proponent testimony:
Terry Caster, 1119 S. Butte Creek Rd, Scotts Mills, OR; recalled testimony provided to the Planning Commission was not relevant to the Public Hearing.

Valerie Bowan, 4182 Mountain View; referenced page 104. She commented on the information indicated where the housing would be located on one location rather than spread throughout the City. She stated she would like to see a crosswalk/light at Jefferson Street sooner rather than later.

Mary Rose Brant, 659 N. James; said her family has been operating their farm for years and a multi-family development would change the neighborhood. She suggested using the Eugene Field site for multifamily housing and asked the Council to deny the zone change request.

Carol Sanderson, resident; said approving the request would be a mistake.

Applicant rebuttal:
Mr. Oster addressed the comments and included he would meet with ODOT in regards to sidewalks on James Street when a development plan comes before the City.

Councilor Carter moved to close the Public Hearing. Councilor Freilinger seconded the motion and it carried as follows:

Aye:	Jim Sears
	Matt Plummer
	Dana Smith
	Jason Freilinger
	Kyle Palmer
	Laurie Carter
	Rhett Martin
Nay:	None

Mayor Palmer closed the Public Hearing at 8:41 p.m.

The Council reviewed the application. There was concern regarding the applicant's intention to not develop the area and the lack of infrastructure available to serve this project.

Councilor Freilinger moved to deny the proposed Comprehensive Plan Amendment and Zone Change request for 608 N. James St. Councilor Carter seconded the motion and it carried as follows:

Aye:	Jim Sears
	Matt Plummer
	Dana Smith
	Jason Freilinger
	Kyle Palmer
	Laurie Carter
	Rhett Martin
Nay:	None

The Council recessed for a short break at 9:00 p.m. and reconvened at 9:07 p.m.

Councilor Freilinger moved to have the first reading of Ordinance No. 17-07, An Ordinance Of The Silverton City Council Denying A Comprehensive Plan Map Amendment To Designate 608 North James Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10) by title only. Councilor Smith seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-07 by title only.

Councilor Carter moved to approve Ordinance No. 17-07, An Ordinance Of The Silverton City Council Denying A Comprehensive Plan Map Amendment To Designate 608 North James Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10) on its first reading. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

Councilor Carter moved to have the second reading of Ordinance No. 17-07, An Ordinance Of The Silverton City Council Denying A Comprehensive Plan Map Amendment To Designate 608 North James Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (Rm-10) by title only. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-07 by title only.

Councilor Carter moved to adopt Ordinance No. 17-07, An Ordinance Of The Silverton City Council Denying A Comprehensive Plan Map Amendment To Designate 608 North James Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (Rm-10) on its second and final reading. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger

Kyle Palmer
Laurie Carter
Rhett Martin

Nay: None

6.2 Ordinance No. 17-08 – Public Hearing for a Comprehensive Plan Map Amendment to Designate 814 N 2nd Street Multiple Family Residential with a Concurrent Zone Change to Zone the Property Multiple Family Residential RM-10

Mayor Palmer opened the Public Hearing at 9:12 p.m. and asked if any Councilors wished to declare ex-parte contacts, conflicts of interest or abstain from the discussion. There were no declarations from the Council members.

Community Development Director Gottgetreu provided the staff report and reviewed the criteria. He said the request is to designate 814 N 2nd St Multiple-Family Residential with a concurrent Zone Change to zone the property Multiple-Family Residential (RM-10). He said the requested designation is consistent with any relevant area plans adopted by the City Council. He stated prior to the signing of any ordinance designating the property multi-family, the property owner shall record a restrictive covenant, in a form acceptable to the City, limiting the height of structures built on the property to two stories or less. He said the Planning Commission recommends the Council approve the request.

Applicant testimony:

Steffon Orloff, owner; said he intends to repurpose the existing building. He said the Planning Commission was concerned with the future of the building and he indicated that he would be amenable to condition the height of the building. The Council asked questions in regards to the building.

Public testimony:
There were no comments in favor, opposed, or neutral in regards to the application.

Councilor Freilinger moved to close the Public Hearing. Councilor Sears seconded the motion.

There was discussion about the height versus stories of the building. Following discussion the motion to close the Public Hearing carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin

Nay: None

Mayor Palmer closed the Public Hearing at 9:32 p.m.

The Council asked about the height condition. Community Development Director said the condition would be included on the deed restriction and the applicant is willing to agree to the condition.

Councilor Carter moved to approve the Comprehensive Plan Map amendment and Zone Change for 814 N. Second St. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger

Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

Councilor Carter moved to have the first reading of Ordinance No. 17-08, An Ordinance Of The Silverton City Council Approving A Comprehensive Plan Map Amendment To Designate 814 North 2nd Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10). Councilor Sears seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-08 by title only.

Councilor Freilinger moved to approve Ordinance No. 17-08, An Ordinance Of The Silverton City Council Approving A Comprehensive Plan Map Amendment To Designate 814 North 2nd Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10) on its first reading. Councilor Smith seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

Councilor Freilinger moved to have the second reading of Ordinance No. 17-08, An Ordinance Of The Silverton City Council Approving A Comprehensive Plan Map Amendment To Designate 814 North 2nd Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10). Councilor Carter seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-08 by title only.

Councilor Freilinger moved to adopt Ordinance No. 17-08, An Ordinance Of The Silverton City Council Approving A Comprehensive Plan Map Amendment To Designate 814 North 2nd Street Multiple-Family Residential With A Concurrent Zone Change To Zone The Property Multiple-Family Residential (RM-10) on its second and final reading.

Councilor Carter seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin

Nay: None

VII. CONSENT AGENDA

Councilor Carter moved to approve the Consent Agenda, which included Agenda Items 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, and 7.7. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Kyle Palmer
Laurie Carter
Jason Freilinger
Rhett Martin

Nay: None

7.1 Authorize the City Manager to sign Amendment Number 01 to the Multimodal Transportation Enhance Program Agreement

7.2 Contract Award – Construction Services for 2017 Crack Sealing and Asphalt Skin Patching Work

7.3 Authorize the Mayor and Council President to sign Amendment Number 01 – Cooperative Traffic Signal Maintenance Agreement No. 28642

7.4 Authorize the City Manager to Sign ODOT 5311 Grant Agreement for Silver Trolley operations

7.5 Resolution No. 17-20 – Transfer Resolution to increase Contracted Services in the Building Operations Fund

7.6 Liquor License Application – Main Street Bistro and Coffee, LLC and Branches and Bloom, LLC

7.7 Resolution No. 17-21— A Resolution to transfer funds for the assessment of The Oregon Garden Sewer Lift Station and Force Main

VIII. DISCUSSION/ACTION ITEMS

8.1 Ordinance No. 17-09 – Adopting new code provisions for a Motor Vehicle Fuel Tax

Public Works Director Christian Saxe provided the staff report. He indicated the City has struggled with maintaining its aging street infrastructure and funding for transportation projects has been reduced by several statewide initiatives. He said Council directed staff to move forward with a fuels tax ballot initiative. He indicated the Council would have to approve Ordinance No. 17-09, and adopt Resolution No. 17-22 to place a $0.02 per/gallon motor vehicle fuel business license tax measure on the November 2017 ballot.

Councilor Carter moved to have the first reading of Ordinance No. 17-09, An Ordinance Of The Silverton City Council Amending Silverton Municipal Code; Title 3, Adding Chapter 3.10: Imposing A Motor Vehicle Fuel Tax And Providing For Enforcement, Administration, And Collection Of The Tax by title only. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-09 by title only.

Councilor Carter moved to approve Ordinance No. 17-09, An Ordinance Of The Silverton City Council Amending Silverton Municipal Code; Title 3, Adding Chapter 3.10: Imposing A Motor Vehicle Fuel Tax And Providing For Enforcement, Administration, And Collection Of The Tax on its first reading. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

Councilor Carter moved to have the second reading of Ordinance No. 17-09, An Ordinance Of The Silverton City Council Amending Silverton Municipal Code; Title 3, Adding Chapter 3.10: Imposing A Motor Vehicle Fuel Tax And Providing For Enforcement, Administration, And Collection Of The Tax by title only. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

City Manager Wurster read Ordinance No. 17-09 by title only.

Councilor Carter moved to adopt Ordinance No. 17-09, An Ordinance Of The Silverton City Council Amending Silverton Municipal Code; Title 3, Adding Chapter 3.10: Imposing A Motor Vehicle Fuel Tax And Providing For Enforcement, Administration, And Collection Of The Tax on its second and final reading. Councilor Freilinger seconded the motion.

Councilor Smith asked if there were any comments from the public. City Manager Wurster said the City did not receive any comments. Public Works Director Saxe indicated there was information available in the newspaper prior to the meeting.

Following discussion, the motion carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

8.2 Resolution No. 17-22 – A Resolution to Place a $0.02 per gallon Fuel Tax Measure on the November 2017 Ballot

Councilor Carter moved to approve Resolution No. 17-22, A Resolution Approving A Ballot Title And Explanatory Statement For Voter Enactment Of A Motor Vehicle Fuel Business License Tax And Referring The Measure To The Ballot. Councilor Freilinger seconded the motion.

The Council considered whether they should wait to pass the Resolution. Following the discussion the motion carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

IX. APPOINTMENTS TO COMMITTEES AND ADVISORY GROUPS

9.1 Appointment to the Silver Falls Family YMCA Leadership Council

Councilor Carter moved to appoint Matt Plummer to the YMCA Leadership Council. Councilor Sears seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer
Laurie Carter
Rhett Martin
Nay: None

X. COUNCIL DISCUSSION

Councilor Sears moved to continue the Meeting past the 10:00 p.m. standard adjournment time. Councilor Freilinger seconded the motion and it carried as follows:

Aye: Jim Sears
Matt Plummer
Dana Smith
Jason Freilinger
Kyle Palmer

Laurie Carter
Rhett Martin

Nay: None

10.1 City Manager Update

City Manager Wurster updated the Council on several issues:

- The downtown tree lighting project received no bids
- The project will be revised to include assistance with traffic control permits
- A tree lighting letter was prepared for the Mayor's signature in regards to an amendment to transportation bill 2017-03

10.2 Council Communications

The Council discussed and provided updates on the following items:

- Transportation bill and funding package, which includes Jefferson and First Streets
- Update on the Bike Fair held on May 20
- Whether the City should update the Comprehensive Plan
- Hold a Work Session in August to consider an ordinance to implement retail licenses (in the range of $250) for all retailers that sell nicotine products – Staff indicated a follow up to Marion County's presentation on items A though E will be presented to the Council in a future meeting
- Environmental Management Committee commercial composting recommendations will be presented to the Council in July
- Urban Renewal Advisory Committee (URAC) would like to meet with the Chamber of Commerce and the Strategic Economic Development Corporation to discuss options for the Industrial Park and there was discussion about creating a grant cycle to encourage competitive grant requests
- The URAC reviewed language to include in the annexation section of Code and to include it in the Development Code updates
- Code enforcement issues such as panhandling – Staff indicated they consulted the City Attorney on creating an ordinance for panhandling and no further direction was requested by the Council
- Paris Climate Accord – after some discussion, a consensus of the Council preferred not to participate in the issue
- Update on the Pet Parade
- Update on the bulletin board at the Jersey Street parking lot

XI. EXECUTIVE SESSION

There were none scheduled.

XII. **ADJOURNMENT**

The Meeting adjourned at 11:06 p.m.

Respectfully Submitted By:

/s/Lisa Figueroa,
City Clerk, City of Silverton

Annual Report
2016-2017

Silverton Chamber of Commerce
Visitor Center

426 S. Water Street - Silverton, OR 97381
www.silvertonchamber.org

The Chamber Mission

As the Chamber moves forward with our 2017-2018 year, We look forward to new and exciting business opportunities and a renewed spirit in Silverton. This past year, we welcome new businesses to town, and new events.

While our core elements of Membership Development, Economic Development and Tourism and Marketing guide our endeavors this year we continue our commitment to expanding our tourism market. Tourism is the one economic development driver that has unlimited potential and Silverton is blessed to have a number of elements that strategically place us front and center in the tourism market.

This year the focus remains capitalizing on niche markets such as weddings, bicycle tourism, recreation, wine enthusiasts and art lovers. Each of these areas are unique and have a natural connection to Silverton. Our focus this year, just as it was last year is to highlight just how Silverton is special and noteworthy when in comes to these areas.

We are convinced that once visitors experience Silverton, they will come back. By focusing on marketing, we feel we can capture a bigger piece of the tourism dollars spent in the region.

We have a renewed focus on bringing visitors to Silverton and the surrounding areas for day trips and especially overnight stays. Our bounty of attractions and specialty shops are a treasure and they need the influx of revenue that visitors bring. We are also going to focus on recruiting more retail shops. This is a missing component in our downtown and surrounding commercials areas.

We work to bring value to our community by recruiting and maintaining current businesses adding to the tax base, fueling transient occupancy taxes for tourism dollars and working with partners to maximize dollars invested in our community.

We look forward to working with all of you!

Julie Hannan-Palmer
Board President
Office Manager
Silver Creek Animal Clinic

Stacy Palmer, IOM
Executive Director
Silverton Chamber of Commerce

The Silverton Chamber of Commerce and City of Silverton have enjoyed a mutually beneficial relationship for many years now. The Chamber provides Visitor Center facilities and services and the City provides a much needed source of revenue for those services. With those funds we are able to serve as the front door or warm welcome for visitors and potential new residents to the community. These folks are looking for information on everything from dining and shopping to recreation, lodging and even relocation.

The Visitor Center is open Monday through Friday during the Winter months 9:00 to 5:00 p.m., and from Memorial Day to Labor Day we extend those hours to include Saturdays. In the office we provide a number of local business brochures, flyers and special coupons. We have other community information as well, such as Church directories, cemetery lists with directions and list of community organizations and community calendars. We have regional publications and brochures available for visitors as well. We have reciprocal agreements with most of these advertisers to display our materials in their visitor centers in exchange for displaying theirs in our office.

The agreement between the City and Chamber states that we will:

1. **Maintain regular open hours**—Monday—Friday 9:00—5:00 and Saturdays During the Summer.

2. **Greet and assist visitors and residents, in person, via e-mail and by phone**. This year **8,982** people either called, stopped by or emailed the Chamber a question. Which is a little lower than last year. On average we spend 6 minutes with each walk in and 2 minutes with each phone call.

3. **Provide maps, community information, brochures and suggestions for visitors**. We distributed over 4,872 maps and countless numbers of verbal directions for guests to town, in addition to directions, people are generally looking for info on local businesses, attractions and community feel. We filled 5,734 specific requests for information and had 2,578 brochures picked up from our racks outside. We had over 4,887 downloads of our Visitors Guide from our website.

5. **Mail, e-mail or fax relocation, visitor or business information materials on request**. In 2016 we mailed out 166 Visitor Packet requests and 44 Relocation requests. Our website **www.silvertonchamber.org** continues to play a large tourism information role. Our stats for our website are strong each year. In 2016 our annual number of visits to our site reached 79,621.

   Have available information on parks and recreation, local churches, schools, hospital, demographic data, local festivals and events. We have created a number of local brochures, these include church directories, demographic info, events and attractions and more. These are designed to provide info on the community and give access to as much information for guests as possible. Genealogy is very popular now, so our Cemetery directory brochure has been very helpful to visitors, it describes each cemetery and directions to it. We have info on the Silver Falls School District in our Visitors Guide - it highlights school location, principal and size. We worked closely with Legacy Silverton Medical Center during their transition, and as a resource when they are recruiting new staff and also for new residents to town, educating them on the number of services the hospital provides in town. We also now maintain a community calendar of events on our website. Anyone can submit a “community event” to be posted. The calendar is accessible to everyone on our website **www.silvertonchamber.org.**

6. **Assemble a packet of Silverton Marketing Materials upon request**. We make these packets up as needed, because many times the need for them is specific, either business relocation or start-up or relocation. We can tailor each packet to the needs of our customer - for example we can include an up to date available property list, or detailed list of upcoming events while someone is here visiting. There is a "Info Request" form on our website that allows visitors to check off all the areas that interest them and email the request to us. We then can address the individual needs of each request. We also work with community partners, like the City and SEDCOR to promote their resources for the community as well.

   In 2016 we had **21 requests for business related community information** off our website "Info Request" link. Last year was 27 requests and it was our lowest in several years—we are looking at why businesses aren't looking to relocate here.

7. **Notify hospitality businesses of major events and sports activities.** The Chamber works very well with the larger lodging properties to coordinate when groups are visiting and vice versa. The Resort, Silverton Inn & Suites and RV Park continue to providing the Chamber with list of groups booking, so that we can pass the information along to local merchants. The lodging properties in town are experiencing very successful occupancy numbers, especially in the summer months.

   The Chamber also coordinates local tours—both walking and via vehicle, we serve as step on guides to tell of Silverton's history and history of the murals. We have also worked with local merchants to cater to these incoming groups.

8. **Participate in tourism group activities**. We participate with the North Willamette Valley Tourism Alliance, Willamette Valley Visitor Association and Travel Salem. The Willamette Valley Chambers also meet on a regular basis to work cohesively and efficiently. Whenever possible we participate with regional partners to market the area for the benefit of all. Stacy sits on the Oregon State Chamber Board of Directors, currently as it's Past—President.

9. **Promote Silverton in publications**. We continue to have one of the premier visitor pieces in the valley our Silverton Visitor Guide. We put guides in the rooms at the resort and other lodging properties to encourage folks to visit downtown Silverton and it's surrounding attractions. In addition to the Visitors Guide we have our Map, relocation brochures, the North Willamette Valley Visitor Guide, the North Valley Regional Event Calendar and a number of regional media placements.

   We've expanded our online presence significantly through social media—facebook, twitter, yelp and through email marketing with Constant Contact. Our events, "hot deals" and special notices go out to over 1,000 different followers. We hired a local writer that produces fb notices, website content and a blog, and after our first year, our numbers on social media are up dramatically and our email address sign ups for "tourism information" have gone up as well.

10. **Maintain a calendar of community events**. On our website you can view or submit events for the community to see. It's a great feature of our website, that is accessible for Chamber members and non-members. We also work with a number of community events and festivals to make sure their events are listed and have the information that folks are looking for. We share our event lists with groups like Silverton Together so

they can include events in their printed calendar. We place events on a number of regional calendars, including the Travel Salem email calendar, KGW and various event websites. We also utilize social media and email broadcast services like Constant Contact to keep locals and visitors alike, aware of our events.

We have a weekly email blast of these calendar submissions called "What's Happening" that is sent to over 380 email addresses. In addition to getting this in your email inbox, a condensed version is printed in two sizes each week thanks to our partners the Appeal Tribune. The posters and 8.5 X 11" sizes are distributed at the Wednesday morning Silverton Business Group meetings for free or are available all week at the Visitor Center for anyone to pick up.

11. **Collaborate with groups to further develop regional attractions**.
We continue our mission to utilize our resources effectively and efficiently. Whenever possible we partner with local groups, attractions and event coordinators. We maintain trade show panels that local groups can use when promoting our area, they can be checked out at the Chamber Office. The Oregon Garden, Seven Brides, Art Association and Silver Falls have utilized the panels to promote our area. We work collaboratively to maximize our dollars, but also to send a collective message about what we offer for visitors in this area.

    We also work with members of the various committees for community events, Homer Davenport Community Festival, Friends of Eastside Trails, Silverton Poetry Festival, Silverton Art Festival, Silverton Pet Parade, Silverton Relay for Life, etc. to insure that we are aware and support their activities whenever possible. We help by maintaining a database of information on the current events to share with visitors and locals. We work with several of the groups to secure donations and advertising. We are also contributors and volunteers for several of the festivals, including providing information materials or Info Booths at festivals when appropriate.

12. **Report to the City Annually**. We are happy to share our activities with anyone who shares our commitment and love of Silverton!

Here are a few of the items that we do on an annual basis on behalf of Silverton:

1. **Flower Basket—Silverton In Bloom Program.** This year we installed 76 baskets and now have a number of new sponsors. We also installed flower baskets on C street as a pilot project to see if the baskets would stay healthy for the season. We learned that banners were a better option for the C Street locations.

2. **Christmas Tree and Lighting Program**— The chamber continues to fundraise and bought another new 2,000 new LED lights for the community tree in Town Square Park. We also decorate the public restrooms, and planting beds in the park. We organize and conduct the tree lighting ceremony in conjunction with the Silverton Fire Department. We encouraged businesses downtown to light up their storefronts to encourage visitors to the Oregon Garden's Christmas activities to come downtown as well. We could have had better participation. We are hoping to bring back the holiday decorating contest this year to encourage more to participate.

3. **Tours of Silverton**— We conducted over 9 tours last year—some were small just 3-5 people, others were for as many as 60 on a bus. Most had a shopping or dining component built into the tour time. We conducted a tour of Silverton at the annual LOC Conference held in Salem, they toured Silverton and the Oregon Garden. We were their #1 tour with 43 people.

4. **Group Promotion**— We put together packets for over 650 visitors that were associated with tour groups, car clubs, family reunions and more. We put together packets based on each groups needs and time available in town. Many of these groups are staying at the RV Park.

5. **Judy's Party** —Designed as a fundraiser for chamber activities, we also grant funds to local organizations and non-profit groups. Over the first two years, we have given over $27,000 back to the local community. This is a showcase of local Silverton restaurants and their favorite appetizers. Good food, good music, good times and a great way to give back to Silverton in the name of a local legend.

6. **Silverton First Citizen Banquet**—A recognition event for those special individuals and groups in our community. An annual tradition, starting in 1971. The evening has also come to recognize the outstanding educators in our school district. Held in early February.

Some items from Attachment A of our contract have been combined to avoid duplication.

2016 Visitor Center Costs

Silverton Area Chamber of Commerce

INCOME

City of Silverton			35,000
	Source: TOT Funds reserved through budget process		

EXPENSES

		TO DATE	
Personnel			
	Reg. Staff - Office Coverage 30hr/wk X 52 wks = 1560 hrs X 10.25 hr	12,900	
	Summer Staffing - 100% Coverage 8hr/wk X 13 wks = 104 hrs X 10.25 hr	1,066	
	Taxes -	4,161	
	Supervision - 1/3 Executive Director $50,000 X 1/3	16,500	
	subtotal personnel		34,627
Equipment			
	1/3 Printing/Reproduction (Copier)	1,104	
	subtotal equipment		1,104
Advertising			
	Mural Map Ad	200	
	Shop Hop	650	
	Ad - N. Willamette Valley Visitor Guide, Garden Guide	994	
	Regional Ads	1003	
	Writer—Fb, Blog, Website	1400	
	American Road—1/4 pg. Ad with online	862	
	Willamette Valley Life—Silverton page anchor	596	
	Website - 1/2 for Visitor Portion	1743	
	subtotal advertising		7,448
Memberships	SCVA Membership - Comp.	0	
	POVA Membership	495	
	US Chamber Membership - not renewed	0	
	SEDCOR/Keizer/Mt. Angel/Woodburn - comp membshp	0	
	subtotal membership		495
Overhead	Calculated on 1/2 overhead in chamber budget applicable to Visitor Svc. includes: rent & facility use, repairs & maintenance, telephone, internet, furnishing & equipment		2,795
	TOTAL 2015 - 2016 Expenses		46,469
	Net Income (Loss)		**-11,469**


1915 High School
Park St
Eugene Field
214
Downtown Podium Sites
N 1st St
Opera House
High St
N Water St
Mac's
213
Digerness Store
Oak St
Google earth

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 7.1	**Topic:** Purchase Award- Authorize Sole Source Purchase of Water Meters
	Report No.: 17-67	
	Agenda Type: CONSENT AGENDA	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Chelsea Starner	**Reviewed By:** Christian Saxe	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve the purchase of Neptune water meters and related supplies in an amount not to exceed $140,000, on a sole source basis, from HD Supply Waterworks during the fiscal year of 2017/2018.

BACKGROUND:
During the fiscal year 2017/2018 the public works maintenance division will continue to convert water meter routes from the outdated technology of manual-read meters to radio-read meters. In addition, meters and parts will be used for new construction and failing meter replacement. Due to software compatibility requirements, Neptune brand water meters and replacement parts are the only brand which can be used, qualifying the purchase as a brand name specification per Oregon Administrative Rule (OAR) 125-247-0275(1)(a).

Staff has budgeted $150,000 in the water meter program fund to purchase water meters, parts, and other related products during the fiscal year of 2017/2018. An estimated $140,000 of the budgeted amount will be spent on Neptune meters and supplies from HD Supply Waterworks.

BUDGET IMPACT: **FY(s):** 2017-2018 **Funding Source:** Water Fund

Attachments:
1. Letter from Neptune Technology Group
2. Bid Proposal for Silverton 201-2018 Meter Pricing from HD Supply Waterworks, LTD.

May 12, 2017

City of Silverton
306 S. Water Street
Silverton, OR 97381

HD Supply is the sole authorized distributor in the State of Oregon for Neptune RF meter reading equipment and software, Neptune water meters and Neptune parts.

HD Supply is authorized by Neptune to submit an offer for Neptune water meters and related products.

Thank you for your interest in Neptune products. If you have any questions, please contact your local HD Supply representative, Jered Lindstrom, at 360-600-7603, your local Neptune representative, Tim Loosier, at 509-202-5686, or Neptune's bid department at 334-283-6555.

Sincerely,

Lawrence M. Russo
VP, Finance

LMR/jsk

Bid Proposal for SILVERTON 2017-2018 METER PRICING

CUSTOMER

CITY OF SILVERTON
830 MCCLAINE ST
SILVERTON, OR 97381
Contact: Chelsea Starner

Job
SILVERTON 2017-2018 METER PRICING
Bid Date: 05/18/2017 05:00 p.m.
Bid #: 324899

CONTACT

Sales Representative
Mark Miller
(M) 503-444-0295
(T) 503-620-9123
(F) 503-684-7213
(E) Mark.Miller2@hdsupply.com

HD Supply Waterworks
6720 McEwan Rd
Lake Oswego, OR 97035
(T) 503-620-9123

NOTES

HD SUPPLY WATERWORKS

Bid Proposal for SILVERTON 2017-2018 METER PRICING

CITY OF SILVERTON
Bid Date: 05/18/2017 05:00 p.m.
HD Supply Bid #: 324899

HD Supply Waterworks
6720 McEwan Rd
Lake Oswego, OR 97035
Phone: 503-620-9123
Fax: 503-684-7213

Seq#	Qty	Description	Units	Price	Ext Price
10		**COMPLETE METERS**			
20	1	T-10 5/8 CF E-CODER W/R900I	EA	234.25	234.25
30	1	T-10 5/8X3/4CF E-CODER W/R900I METER PIT SET PL BTM WOODBURN SPEC NO LEAD ED2B31RWF3	EA	234.25	234.25
40	1	T-10 3/4 CF E-CODER W/R900I	EA	282.19	282.19
		FULL LENGTH			
60	1	NEPTUNE 1" R900I ENCODER PIT NO LEAD ED2F11RWF3	EA	352.05	352.05
70	1	T10 1-1/2" CF E-CODER W/R900I NEPTUNE METER, WITH INTEGRATED R900, FLG X FLG. NO LEAD ED2H11RWF3	EA	597.26	597.26
80	1	T10 2" CF E-CODER W/R900I NEPTUNE METER WITH INTEGRATED R900, FLG X FLG. NO LEAD ED2J11RWF3	EA	721.92	721.92
100	1	3" TRU/FLO COMPOUND METER- C/F W/E-CODER R900I PIT REGISTERS NO LEAD EC3BRWF3S1535	EA	2,487.67	2,487.67
110	1	4" TRU/FLO COMPOUND METER- C/F W/E-CODER R900I PIT REGISTERS NO LEAD EC3CRWF3	EA	3,161.64	3,161.64
				Sub Total	8,071.23
				Tax	0.00
				Total	**8,071.23**

TERMS AND CONDITIONS OF SALE("Terms")

1. All references in this document to "Seller" shall include HD Supply, Inc. and / or any parent, subsidiary or affiliate of HD Supply, Inc. (including any division of the foregoing) whether or not performing any or all of the scope hereunder or specifically identified herein. All references to "Buyer" shall include all parent(s), subsidiaries and affiliates of the entity placing the order. Buyer and Seller may be referred to individually as a "Party" and collectively as "Parties".

2. All sales to Buyer are subject to these Terms, which shall prevail over any inconsistent terms of Buyer's purchase order or other documents. Additional or different terms and conditions in any way altering or modifying these Terms are expressly objected to and shall not be binding upon Seller unless specifically accepted in writing by Seller's authorized representative. No modification or alteration of these Terms shall result by Seller's shipment of goods following receipt of Buyer's purchase order, or other documents containing additional, conflicting or inconsistent terms. There are no terms, conditions, understandings, or agreements other than those stated herein, and all prior proposals and negotiations are merged herein. These Terms are binding on the Parties, their successors, and permitted assigns.

3. Prices on Seller website, catalogs or in Seller quotes are subject to change without notice, and all such prices expire and become invalid if not accepted within 10 calendar days from the date of issue, unless otherwise noted by Seller in writing. Price extensions if made are for Buyer's convenience only, and they, as well as any mathematical, stenographic or clerical errors, are not binding on Seller. Prices shown do not include any sales, excise, or other governmental tax or charge payable by Seller to any federal, state or local authority. Any taxes now or hereafter imposed upon sales or shipments will be added to the purchase price, and Buyer shall reimburse Seller for any such tax or provide Seller with an acceptable tax exemption certificate. All prices and other terms provided to Buyer shall be kept confidential except to the extent a Party is required by law to disclose the same.

4. Seller shall not be liable for delay or default in delivery resulting from any cause beyond Seller's reasonable control, including, but not limited to, governmental action, strikes or other labor troubles, fire, damage or destruction of goods, wars (declared or undeclared), acts of terrorism, manufacturers' shortages, availability or timeliness of transportation, materials, fuels, or supplies, and acts of God (each a "Force Majeure Event"). Upon the occurrence of a Force Majeure Event: (a) the time for Seller's performance shall be extended reasonably and the Parties shall adjust all affected dates accordingly; (b) the purchase price shall be adjusted for any increased costs to Seller resulting from such Force Majeure Event; and (c) Buyer shall not be entitled to any other remedy.

5. Seller is a reseller of goods only, and as such does not provide any warranty for the goods it supplies hereunder. Notwithstanding this As-Is limitation, Seller shall pass through to Buyer any transferable manufacturer's standard warranties with respect to goods purchased hereunder. BUYER AND PERSONS CLAIMING THROUGH BUYER SHALL SEEK RECOURSE EXCLUSIVELY FROM MANUFACTURERS IN CONNECTION WITH ANY DEFECTS IN OR FAILURES OF GOODS, AND THIS SHALL BE THE EXCLUSIVE RECOURSE OF BUYER AND PERSONS CLAIMING THROUGH BUYER FOR DEFECTIVE GOODS, WHETHER THE CLAIM OF BUYER OR THE PERSON CLAIMING THROUGH BUYER SHALL SOUND IN CONTRACT, TORT, STRICT LIABILITY, PURSUANT TO STATUTE, OR FOR NEGLIGENCE. BUYER SHALL PASS THESE TERMS TO SUBSEQUENT BUYERS AND USERS OF GOODS. SELLER EXCLUDES AND DISCLAIMS ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SELLER ASSUMES NO RESPONSIBILITY WHATSOEVER FOR SELLER'S INTERPRETATION OF PLANS OR SPECIFICATIONS PROVIDED BY BUYER, AND BUYER'S ACCEPTANCE AND USE OF GOODS SUPPLIED HEREUNDER SHALL BE PREMISED ON FINAL APPROVAL BY BUYER OR BY BUYER'S RELIANCE ON ARCHITECTS, ENGINEERS, OR OTHER THIRD PARTIES RATHER THAN ON SELLER'S INTERPRETATION. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT, WHETHER IN CONTRACT, WARRANTY, INDEMNITY, TORT (INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, ARISING DIRECTLY OR INDIRECTLY OUT OF THE PERFORMANCE OR BREACH OF THESE TERMS, SHALL SELLER BE LIABLE FOR (a) ANY INCIDENTAL, INDIRECT, PUNITIVE, SPECIAL, CONSEQUENTIAL OR SIMILAR DAMAGES SUCH AS LOSS OF USE, LOST PROFITS, ATTORNEYS' FEES OR DELAY DAMAGES, EVEN IF SUCH DAMAGES WERE FORESEEABLE OR CAUSED BY SELLER'S BREACH OF THIS AGREEMENT, (b) ANY CLAIM THAT PROPERLY IS A CLAIM AGAINST THE MANUFACTURER, OR (c) ANY AMOUNT EXCEEDING THE AMOUNT PAID TO SELLER FOR GOODS FURNISHED TO BUYER WHICH ARE THE SUBJECT OF SUCH CLAIM(S). ALL CLAIMS MUST BE BROUGHT WITHIN ONE YEAR OF ACCRUAL OF A CAUSE OF ACTION.

6. Buyer shall indemnify, defend, and hold Seller its officers, directors, employees and agents harmless from any and all costs (including attorneys' and accountants' fees and expenses), liabilities and damages resulting from or related to any third party (including Buyer's employees) claim, complaint and/or judgment arising from Buyer's use of any goods furnished hereunder, as well as any negligent, intentional, or tortious act or omission of Buyer or any material breach by Buyer of these Terms.

7. When goods are delivered to Buyer in Seller's own vehicles, the F.O.B. point shall be Buyer's designated delivery site. In all other cases the F.O.B. point shall be Seller's store or warehouse and all responsibility and costs of shipping and delivery beyond the applicable F.O.B. point shall be borne by Buyer. Title and risk of loss shall pass to Buyer at the applicable F.O.B. point, which for goods not delivered in Seller's own vehicles shall be when Seller delivers the goods to the common carrier. All claims for shortage of goods or for loss or damage to goods as to which Seller has the risk of loss shall be waived unless Buyer, within 10 calendar days after receipt of the short or damaged shipment, gives Seller written notice fully describing the alleged shortage or damage. Partial shipments are permitted at Seller's discretion.

8. Any change in product specifications, quantities, destinations, shipping schedules, or any other aspect of the scope of goods must be agreed to in writing by Seller, and may result in a price and delivery adjustment by Seller. No credit for goods returned by Buyer shall be given without Seller's written authorization. All returns are subject to a restocking charge.

9. Unless otherwise agreed in writing, payment terms are net 30 days from delivery, payable in United States of America ("U.S.") dollars. Notwithstanding the foregoing, all orders are subject to Seller's continuing approval of Buyer's credit. If Buyer's credit is not approved or becomes unsatisfactory to Seller then Seller, in its sole discretion, may suspend or cancel performance, or require different payment terms, including but not limited to cash on delivery or in advance of shipment. In addition, Seller may in its discretion require an advance deposit of up to 100% of Seller's selling price for any specially manufactured goods ordered by Buyer hereunder. Payments due hereunder shall be made in the form of cash, check, or money order, or other tender approved in writing by Seller. Seller may, in its sole discretion, apply Buyer's payment against any open charges. Past due accounts bear interest at the lesser of 1.5% per month or the maximum rate permitted by applicable law, continuing after Seller obtains judgment against Buyer. Seller may exercise setoff or recoupment to apply to or satisfy Buyer's outstanding debt. Buyer shall have no right of setoff hereunder, the same being expressly waived hereby.

10. Buyer shall not export or re-export, directly or indirectly, all or any part of the goods or related technology obtained from Seller under these Terms except in accordance with applicable export laws and regulations of the U.S. Further, a Buyer that is a non-U.S. company or citizen shall similarly limit any export or re-export activity to that which would be deemed compliant with U.S. export laws and regulations if performed by a U.S. company or citizen.

11. Buyer shall pay Seller all costs and expenses of collection, suit, or other legal action brought as a result of the commercial relationship between them, including, but not limited to, all actual attorneys' and paralegals' fees, and collection costs, incurred pre-suit, through trial, on appeal, and in any administrative or bankruptcy proceedings. Any cause of action that Seller has against Buyer may be assigned without Buyer's consent to HD Supply, Inc. or to any affiliate, parent or subsidiary of HD Supply, Inc.

12. This Agreement, Buyer's account, and the business relationship between Buyer and Seller shall be governed by and construed in accordance with the laws of Georgia without regard to conflicts of laws rules, and specifically excluding the UN Convention on Contracts for the International Sale of Goods. The Parties agree that any legal action arising under or related to this Agreement shall be brought in Cobb County, Georgia, and any right to object to such venue or to assert the inconvenience of such forum is hereby waived.

13. If Buyer fails to comply with these Terms, Seller may terminate or restrict any order immediately upon notice to Buyer. Buyer certifies that it is solvent and that it will advise Seller immediately if it becomes insolvent. Buyer agrees to send Seller written notice of any changes in the form of ownership of Buyer's business within 5 days of such changes. Buyer and Seller are the only intended beneficiaries of this document, and there are no third party beneficiaries.

14. The invalidity or unenforceability of all or part of these Terms will not affect the validity or enforceability of the other terms. The parties agree to replace any void or unenforceable term with a new term that achieves substantially the same practical and economic effect and is valid and enforceable.

15. The following provisions shall survive termination, cancellation and completed performance of this Agreement as long as necessary to allow the aggrieved party to fully enforce such clauses: 5, 6, 9, 10, 11 and 12.

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 7.2	**Topic:** Approval of 2017-2018 Biosolids Land Application Contract Extension
	Report No.: 17-68	
	Agenda Type: CONSENT AGENDA	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Steve Starner	**Reviewed By:** Christian Saxe	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve the Agri-Tech 2017-2018 Agreement extension for land application services.

BACKGROUND:
On April 6, 2015, the City Council authorized the City Manager to recognize a low competitive bid and enter into an Agreement with Agri-Tech of Oregon for the 2015 Biosolids Hauling and Land Application Project (fiscal year '15-'16). The Agreement allows for an annual extension of the terms of the Agreement for no more than three years (or through fiscal year '18-'19). Annual Agreement extensions may include a price adjustment for a fuel cost increase if approved by the City Council.

For the 2017 land application project, Agri-Tech has elected to forgo any fuel price adjustments and will complete the project according the terms, conditions and prices originally outlined in the 2015 Agreement.

BUDGET IMPACT: **FY(s):** 2017-2018 **Funding Source:** Sewer Operations Fund

Attachments:
1. Agri-Tech contract renewal request
2. 2017 Agreement Extension

AGRI-TECH INC., of OREGON
A Republic Services Company

March 9th, 2017

City of Silverton
Wastewater Treatment Plant
400 Schemmel Lane
Silverton, OR 97381

Attn: Steve Starner

Re: ***Contract Extension - Biosolids***

Dear Mr. Starner:

Providing reasonable hauling and land application rates is a priority for Republic Services. We would like to extend our contract "2016 Biosolids Hauling and Land Application Project 906" through 2017 at the unit price established in 2016 of $0.0382 per gallon of biosolids land applied and $0.0377 per gallon of biosolids emptied at City of Salem WWTP.

You can be confident that we will continue to professionally manage your waste stream safely and in accordance with federal, state and local laws and regulations. Please feel free to contact me at (541) 801-2116 if you have any questions. As always, we appreciate your business and look forward to servicing your needs in the months and years to come.

Sincerely,

Republic Services

Tim Tycer

Tim Tycer
Operations Supervisor

AGREEMENT
2017-2018 EXTENSION
2015 BIOSOLIDS HAULING AND LAND APPLICATION
PROJECT 906

THIS SECOND EXTENTION TO AGREEMENT, made and entered into this ___ _____, day of _____, 2017
by and between the City of Silverton in Marion County, Oregon, hereinafter referred to as Owner, and AGRI-TECH OF OREGON DBA REPUBLIC SERVICES, hereinafter referred to as Contractor.

RECITALS

A. Owner and Contractor entered into that certain Agreement for 2015 Biosolids Hauling and Land Applications Project 906 dated April 29, 2015 including all of the Contract Documents (the Agreement) pursuant to which Contractor agreed to haul and land apply biosolids form the wastewater treatment plant to permitted site and such additional and incidental work as set forth in the Agreement..

NOW, THEREFORE, the Owner and Contractor for the considerations hereinafter set forth, agree to extend the Agreement subject to the following:

1. **Extension of Agreement**– The parties agree to extend the Agreement through June 30, 2018.

   Upon approval by both parties including the City of Silverton's City Council, The Agreement may be extended on an annual basis. Annual renewals of the Contract will be contingent upon the approval of the project in the City's annual fiscal year budget, effective July 1st of each calendar year. **This extension is the second extension of the Agreement and is based on all terms and conditions agreed upon as part of the Agreement.**

2. **Special Provisions** –

Owner agrees to pay and Contractor agrees to accept, in full payment for the performance of this Contract at the unit price of $ .0382 per gallon of biosolids land applied and $ .0377 per gallon of biosolids emptying at City of Salem WWTP in accordance with the Technical Specifications. (see Exhibit A) NO CHANGE IN COSTS FOR 2017-18.

Progress payments will be made in accordance with the General Specifications of the Agreement.

IN WITNESS WHEREOF, the parties have made and executed this Agreement, the day and year first above written.

Owner	**Contractor**
CITY OF SILVERTON	AGRI-TECH OF OREGON DBA REPUBLIC SERVICES
(Signature of Authorized Person)	(Signature of Authorized Person)
Christy S. Wurster, City Manager	(Print Name and Title of Authorized Person)

CITY OF SILVERTON, OREGON

WASTEWATER TREATMENT PLANT

2015 BIOSOLIDS HAULING AND LAND APPLICATION
Project No. 906

TECHNICAL SPECIFICATIONS

Contractor <u>shall</u> provide to the City the following services:

1) General conditions.
   a) The contractor shall haul all biosolids per bid Schedule to City selected and approved sites. The City's Project Manager will supply the applicable field location and the authorized truck travel routes to and from site locations.
   b) The City's Project Manager will have the authority to halt application due to farming needs, weather, spillage, mechanical or operational problems at the wastewater treatment plant.
   c) The OAR 340 Division 50 rules and EPA's 40 CRF Part 503 regulations regulate the City's biosolids program. All biosolids to be hauled and applied are class"B" biosolids.
   d) Due to storage limitations, crop requirements, and weather implications, contract schedule compliance is critical. The Contractor will execute the contract with the City within five (5) working days after notification of acceptance of the Proposal. The Contractor shall be on site with all machinery, tool, apparatus and working within five (5) calendar days after the Notice to Proceed or date specified in the Notice to Proceed, is issued by the City's Project Manager.
   e) A Project Manager for the Contractor shall be designated and be responsible for biosolids hauling and application coordination.
2) Biosolids Characteristics and Volume.
   a) Biosolids are in liquid form and stored in four (4) concrete lined lagoons.
   b) Concentrations of solids will range from approximately 3% to 4%.
   c) Biosolids have been produced with a conventional Anaerobic Digestion process.
   d) Estimated quantity of biosolids to be applied is 1.3 million gallons.
3) Biosolids Handling, Hauling, and Application.
   a) Project completion will include mixing all lagoon contents, washing down the concrete lagoon walls, and pumping all biosolids from the lagoons into tanker trucks to the satisfaction of the City.
   b) Contractor must supply all mixing, pumping and truck loading equipment. The City will provide 440 volt service and washdown hoses at the wastewater treatment plant.
   c) Quantity of biosolids hauled will be reported daily to the City's Project Manager. Records will include truck identification, driver name and signature, time and date of haul, application area, and hauled volume for each load. After a field is completed, a final report with the total gallons applied to the field and the application area will be delivered to the City's Project Manager.
   d) Contractor will provide experienced, competent drivers capable of applying biosolids to agricultural land at agronomic rates. Drivers must hold the necessary current CDL license, and comply with applicable ODOT drug and alcohol testing requirements.

e) Contractor is responsible to ensure that trucks are not overloaded and would pay any and all fines or penalties resulting from an overweight load.
f) Application rates will vary with biosolids characteristics and will be determined by the City's Project Manager. Contractor must maintain a 50 foot minimum setback between biosolids application areas and all public roadways and property lines. A minimum 200 foot setback shall be maintained between biosolids application areas and all wells and other surface water sources.
g) Contractor shall have the ability to transport and apply a minimum of 1.3 million gallons of biosolids within fifteen (15) working days (approximately 86,667 gallons per day).
h) Contractor shall use leak-proof trucks suitable for hauling liquid biosolids on public roadways to avoid spillage. Use of any equipment that allows leakage or damage to streets is prohibited. All costs associated with cleanup of spillage or damage at the wastewater treatment plant or the application site or public roadways shall be the responsibility of the Contractor.
i) Contractor shall apply biosolids evenly and thinly in a manner that will prevent ponding and runoff. Under no condition shall the Contractor allow truck traffic to pass over areas of recently applied biosolids.
j) The Contractor shall use either pressurized tanks or tanks with pumping capability to ensure the even application of biosolids. Trucks shall be equipped with driver cab actuated valve for controlling the release of tanker contents. The Contractor shall provide proof of adequate hauling and application equipment at the time of the Proposal submittal.
k) Cost submitted in the Proposal shall cover hauling to sites with a ten (10) mile radius (straight-line distance) of the wastewater treatment plant. If application sites are outside this distance, both parties must agree on the additional cost in advance of starting work.

TECHNICAL SPECIFICATIONS

CONTRACTOR CERTIFICATION

I, the undersigned, have read and understand the TECHNICAL SPECIFICATIONS for the 2015 Biosolids Hauling and Land Application Project. I understand that the TECHNICAL SPECIFICATIONS are an integral part of the Contract for the project and agree to perform the work in accordance with the terms and conditions as described above.

Name of Company: Agri-Tech of Oregon DBA Republic Services

Signed by Contractor: Michele Tyler Date: 3/5/15

Printed Name: Michele Tyler

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 7.3	**Topic**: Grant Awards – Silverton Tourism Promotion Committee Grant Recommendations
	Report No.: 17-69	
	Agenda Type: CONSENT AGENDA	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: J. Gottgetreu	**Reviewed By:** Christy S. Wurster	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve the three grant recommendations forwarded by the Silverton Tourism Promotion Committee.

BACKGROUND:
In September 2008, City Council established a transient occupancy tax in Silverton. The Committee is responsible for reviewing and rating tourism grant proposals based on a set of criteria.

The Committee met June 6th, 2017 and July 11th, 2017 and recommends the Council fund the following four projects.

Applicant	Project	Proposed Funding
Silverton Sidewalk Shindig	6th Annual Sidewalk Shindig	$6,000
Oregon Garden, Silverton Chamber & Fine Arts Festival	Eclipse Shuttle	$5,000
Silverton Art Association and the Silverton Bike Alliance	Bike Parking Art Project	$1,100

The Tourism Promotion Committee reviewed a request in the amount of $2,250 from the Silverton Senior Center for a Solar Eclipse Pancake Breakfast Fundraiser and does not recommend the Council fund the request.

BUDGET IMPACT: **FY(s): 2017-2018** **Funding Source: Transient Tax**

Attachments:
1. Tourism Promotion Grant Applications

City of Silverton. 306 S Water Street. Silverton, OR 97381 Phone: 503-874-2212 Fax: 503-873-3210 www.silverton.or.us

SILVERTON TOURISM PROMOTION GRANT APPLICATION

Project or Event Name Silverton Sidewalk Shindig: 6th Annual

Sponsor Name/Organization Silverton Citizen Shindig Board

Mailing Address 732 S. Water. St.

City, State, Zip Silverton, OR 97381

Project Coordinator/Contact Person Gregg Sheesley Daytime Phone 503-873-2512

Contact Person Email magduo@yahoo.com

Total Cost of Project: $ 11,650

Grant Amount Requested $ 6,000

Sponsor Dollar Match: $ 5,650

In-kind Labor Match: $

TOTAL POSSIBLE POINTS = 60

The Tourism Promotion Committee will give preferential consideration to grant applications that have a minimum score of 30 points.

1) **Brief Project or Event Description: 5 Points**
Provide a detailed description of the proposed event or project and targeted audience.

Our annual focus/mission is to host an event to draw new and returning guests from throughout mid-Willamette Valley, statewide, and neighboring states. We have been highly successful in meeting and exceeding our lofty expectations by:

- focusing our collective energy on highlighting th unique, inviting, and historic downtown area.
- presenting an all-day line-up of diverse, live, and quality music
- providing 120 hours of free, nonstop performances in 25+ downtown locations from noon to late evening to motivate guests to come early and stay late
- creating an atmosphere that appeals to all ages and cultures, including family activities staged all day in Town Square Park
- emphasizing a broad base of sponsors (28) and musicians (60-80) who share ownership in the event's success and assist in promoting the Shindig through their extensive range of contacts

And, most important to your funding requirements:

- inspiring local attending citizens to serve as community advocates and ambassadors motivating out-of-town guest to plan day and overnight return visits.

2) Project or Event Return on Investment: 15 Points Total

a) Number of Overnight Stays: 5 Points

Demonstrate how many overnight stays your project will generate. Explain how you will track the overnight stays generated by your project.

Based on our event information center's 2016 tally sheet, approximately 60% of our guests came from outside the immediate area. We think that a considerable number stayed over with family and friends or came in RVs. When we checked with the RV park, Oregon Gardens, Silverton Inn & Suites, and area B & Bs, they indicated the Shindig had a postitive effect on their Friday and Saturday overnight stays, based on calculation of 1,600-1,800 attendees, 60% represents 1,000 potential return visitors.

b) Preferrence for Off-Season Projects: 5 Points

Demonstrate how your project will increase the number of overnight stays during Silverton's off-season (November – March).

Numerous new guests returned to the info booth to thank us for hosting the event and informed us that they planned to be back to visit Silverton, and many requested recommendations regarding overnight accommodations. November-March becomes an ideal time for return overnight visits for those who carry away frond memories from October's Shindig.

c) Positive Rate of Return: 5 Points

Currently, each overnight stay generates approximately $13 in transient occupancy tax revenue. Demonstrate how the requested grant amount equals or exceeds the transient tax generated by the proposed project.

Unfortunately we are unable to provide exact calculations since our event is free (so guests are not required to contact us.) However, it's highly likely that 1,000+ potential return overnight visitors would generate considerable revenue.

3) Project or Event Personnel: 5 Points

Briefly describe your organizational structure. List the primary people involved, their positions, qualifications and experience.

We have an all-volunteer board with different volunteers assuming task coordination. We meet at least twice a month from February to December. our meetings are open to anyone wishing to attend. Our current active board members are:

1) Nicholas Coffee--Owner, Astonishing Adventures
2) Hilary Dumitrescu--Silverton Food Co-Op Board member
3) Greg Hart--Molalla resident and former owner of Silver Creek Coffee House
4) Colby Jackson--Owner, The Lucky Leaf
5) Kathy Kvenbo--Owner, Redeemed and Restored
6) Bonnie Lester--Owner, Whimsy, Etc.
7) Ron Nelson--Silverton resident
8) Gregg Sheesley--Silverton resident
9) Dona Snyder--Owner, The Red Bench
10) Lawrence Stone--Silverton resident and Community Events planningconsultant

4) Project or Event Timeline: 5 Points

Use of grant funds is limited to 12 months unless a longer period of time is requested and approved by City Council. Describe the schedule and timeline for the project or event.

Our planning timeline covers a ten-month period (Feb.-Nov.) Please refer to our attached 2017 Production Schedule for further details. You will note that considerable time and energy is required to assure success and safety for our sizable event.

5) Project or Event Objectives: 15 Points

Describe how this project or event promotes tourism and economic development (directly and indirectly) in Silverton.

Nearly this entire request honors and supports your principal funding objective. It embraces the sole purpose for hosting our annual event. As for this coming year, and the future, the Shindig is sure to expand in attendance, increasing local investors, consumers, overnight guests, and even new home residents. The possibilities are limitless.

6) Event/Project Budget: 15 Points

On a separate page, provide a total budget for the event or project, including at a minimum, the following information:

a) List all funding sources for the project. In-kind labor and donated services can also be built into the total cost of the project and used as a funding source. The value of volunteer time for this grant period is $19.51 per hour according to the Independent Sector and The U.S. Bureau of Labor Statistics.

b) Items that will be purchased with the requested grant funding (for example, if the request is to purchase radio or newspaper advertising for the event—list the specific stations or newspapers, size of advertisement, number of times the advertisement will be featured and any other pertinent details). If awarded funding, the grant agreement will require that the project or event be identified as sponsored by a Silverton Tourism Promotion Grant. Any equipment proposed to be purchased or rented by grant funds must be identified and its use must be explained in narrative form.

c) List sources of in-kind (volunteer hours), donated services and other grant sources for this event/project.

[This table shows suggested budget items and is not inclusive of possible event/project costs.]

	Requested Grant Amount	Real Dollar Match	In-kind Labor and Donated Services	Total
Personnel Services				
Project Administration Costs				
Materials				
Equipment/Supplies				
Construction Costs				
Event Costs				
Transportation Costs				
Insurance Costs (if needed)				
Additional Expenses (List)				
Totals				

TOURISM PROMOTION GRANT TERMS

- Once the grant agreement is executed, 50% of the awarded grant funds will be distributed to the applicant.
- In order for the Project to be eligible for full distribution of awarded funds, the Project must be completed by the specified deadline in the grant agreement (12 months from date of receiving the grant award).
- In order to receive final payment for the awarded grant, and be considered for future Tourism Promotion Grants, the Project Coordinator must submit an Exit Report (please limit to two pages) within thirty days (30) of completing the grant project. The Exit Report must include:

  (1) Brief description of the projects.
  (2) Description of project accomplishments.
  (3) A final budget.
  (4) Measures of performance. (i.e., number of people served, effect of the project on the City)
  (5) Narrative stating how funds were spent.
  (6) Listing of additional sponsors of the project.
  (7) Before and after photos of grant project, if applicable.
  (8) Any promotional material samples. (advertisements, flyers, posters, etc...)

- Exit Reports will be reviewed and approved during the following Tourism Promotion Committee meetings:

Exit Report Review Schedule and Meeting Calendar 2016-2017

Month Exit Report Submitted	Exit Report Review Meeting Date
March, 2016 – August, 2016	September, 2016
2016August, 2016 – March, 2017	April, 2017

Office Use Only

Date Application Submitted_____

Action Taken/Date of Action_____

2017 Silverton Sidewalk Shindig Operating Budget

I. Estimated Income

Event Sponsors: Downtown Businesses (10 of $300 + 19 @ $60)	$4,150.00
City of Silverton Tourism Board Grant Request	$6,000.00
Souvenir and Poster Sales and Misc. Donations	$300.00
2016 Carry-Forward	$400.00
Zebra Prints discount on 2017 prep and printing bill	$800.00
TOTAL	**$11,650.00**
II. Estimated Expenditures	
Musicians 20 + duos, trios, quartets, and big bands, + 24 singles acts	$4,400.00
Promotion & Printing	$3,850.00
Zebra Print prep & printing: $1,600	
Media/Radio Ads: $1,200	
Road signs: $200	
Additional website & social media: $300	
Banner: $500	
Window displays: $50	
Kids & Family Activities (Town Square Park)	$1,100.00
Face Painter, Magician, Caricatures artist: $100 each ($300)	
Special Stage acts: $500	
Kids' Make-and-take instruments supplies: $200	
Miscellaneous: $100	
Event Day Insurance Policy ($3 million coverage)	$500.00
Materials, Supplies, Rentals, and Staff aids	$950.00
Sound system rental and sound operator: $100	
San-a-cans: $500	
Misc. supplies, i.e., rope, tape, glue, etc.: $150	
Photographer & Prints: $100	
Litter patrol: $100	
*Contingency Fund and/or carry forward	$850.00
TOTAL	**$11,650.00**

*Event specialists usually recommend that complex events funded by several sources (in our case, 30 sponsors + potential grant funds) plan for a 5% to 10% contingency to fund unpredicatable additioanl expenses.

Done	2017 Shindig Production Schedule & Assignments	Person Responsible				
		HD	GH	RH	GS	LS
	March					
x	Revisit & establish Purpose Statement					
x	Place musician recruit ad w/deadline to respond					
x	Prep/Submit Tourism Grant Requiest (post-event payment prob)					
x	Decide on non-profit status application					
x	Recruit/Add New Board Members					
x	Determine Poster location and prep					
x	Prep/Print venue participation form and deliver					
x	Determine board member coordination/lead assignments					
x	Brainstorm ideas for this year's even--SJC sessions					
	April					
	Contact al potential musicians re. 2017 availability (select)					
	Print photos & prep display panel					
	Start recording venu & musician participation list					
	Design program layout					
	Check stored inventory for repair/addition needs					
	Contact new venue possiblities					
	Review, select, contact musician ad respondents					
	May					
	Establish event bank accont					
	Check back w/all non-response venues					
	Begin collection of sponsorship money ($50 or $300)					
	Determine major sponsor for poster placement					
	Put up display photo panel in first venue location					
	Print "no logos" posters					
	Print & start distribution of news release (major mags)					
	Pre-pay Zebra Print for materials ($400)					
	Contact MAPS Credit Union w/100 noisemakers request					
	Check back (early in month) re: tourism grant progress					
	June					
	Purchase event insurance					
	Submit City Events form w/copy of ins. Coverage					
	Double check stored inventory					
	Foreward "no logo" posters to select media					
	Print "no logo" poster (50 & hold 25 for Sales)					
	Finish collecting all sponsorship payments					
	Start program prep 2/venue copy deadline mid-July					
	July					
	Finish all program copy & printing by end of first week in August					
	Prep and send musician contracts for return by July 31					
	Arrange Aug-Sept. 15 Ads w/Salem Weekly, Our Town, Shopper					
	Arrange 30-second radio spot ads from Sept 1st to event day					
	Begin recruiting volunteers					
	Prep all inventory by end of month (repairs, new signs, etc.)					
	Review/revise Facebook Page (if not already done)					
	Check w/volunteers re. interest in handling a pre-event task					

Done	2017 Shindig Production Schedule & Assignments	Person Responsible				
		HD	GH	RH	GS	LS
	August					
	Order larger street signs (3 sets) from Nic Ignelzi					
	Distribute programs to all venues (20) and in- and out-of-town locations					
	Put up posters in in-and-out of town venues and begin sales					
	Arrange for face painting, magic act, and teen open mic MC					
	Contract w/Orleans Alley coordinator and sound system					
	Arrange for tents					
	Pick up and store tables & chairs					
	Put up large downtown banners (Harcourt, Whimsy, Gather)					
	Deliver Salem Weekly, Our Town, Shopper design & copy					
	Visit Statesman Journal w/news release, poster, and photos					
	Set up Shindig promo presentations to local clubs and organizations					
	Arrange for "No Parking" bags (12) w/City Hall accounting office					
	Host open meeting w/invitations to venues, sponsors, and volunteers					
	September					
	Finish volunteer sign-ups and assigned times					
	Prep and print volunteer instructions					
	Prep all music note signs w/2017 individual venue schedules					
	Complete local club and organization presentations					
	Staff info center on First Friday (hand out programs, sell posters)					
	Collect community publications and maps for info center inventory					
	Set up info center committee coverage (at least one per shift)					
	Put up all street signs					
	Clean up any details...This is our "tend to details month!"					
	Err on the side of over-planning!					
	Order 10 city barricades (city maintenance shop-Chelsea Starner)					
	Event Week					
	Be sure to have designated Rover and Committee Members at each shift					
	Thursday:					
	Pick up barricades					
	Make up musician payment envelopes and require signature					
	Prep info center festival kit (tape, rope, scissors, tools, etc.)					
	Friday:					
	Pick up "No Parking" bags and attach LATE Friday night					
	Make bank draw for musician payments					
	Set up all tents (except Towne House)					
	Set up Info Center and Staff for First Friday (by 6 PM)					
	Rope off Orleans Alley and front half of Towne House parkign lot LATE Friday night					
	Saturday:					
	Assemble all venue signs FIRST THING Saturday morning					
	Arrange Info Center supplies **by 10 a.m. total set up**					
	Deliver/Set up chairs and tables **by 10 a.m.**					
	Deliver/Place music venue signs w/pinwheels and tip buckets by **11 a.m.**					
	By 11:00 p.m.:					
	Clean up debris and store venue signs and No Parking bags at Info Center between 7-11 p.m.					
	Monday:					
	Return City barricades to Shop					
	Store all venue signs, tip buckets, banners, tables, chairs, street sign, and misc. Info Center inventory					
	Deposity any unused bank draw					

SILVERTON TOURISM PROMOTION GRANT APPLICATION

Project or Event Name: The Great American Eclipse - Silverton Shuttle

Sponsor Name/Organization: The Oregon Garden, Silverton Chamber of Commerce & Silverton Fine Arts Festival

Mailing Address879 West Main Street

City, State, Zip Silverton, OR 97381

Project Coordinator/Contact Person: Sara Hammond Daytime Phone: 503-874-2521

Contact Person Email: Sarah@moonstonehotels.com

Total Cost of Project: $5,300

Grant Amount Requested$5,000

Sponsor Dollar Match: $200

In-kind Labor Match: $100

TOTAL POSSIBLE POINTS = 60

The Tourism Promotion Committee will give preferential consideration to grant applications that have a minimum score of 30 points.

1) **Brief Project or Event Description:5 Points**
Provide a detailed description of the proposed event orproject and targeted audience.

The Great American Eclipse isaonce-in-a-lifetime solar event passing through the Willamette Valley on August, 21 2017. Due to Silverton's prime location along the path of totality, we see an exceptional opportunity to market our town to guests that have never traveled to Silverton, and are not familiar with all that we have to offer as a year-round tourism destination.

To increase the amount of tourism revenue, we think it is important to get guests to stay here during the days leading up to the eclipse, and to be able to get them around town without creating mass amount of traffic and parking issues.

The Silverton Fine Arts Festival, which takes place on Saturday, August 19 and Sunday, August 20 before the solar spectacle, is theming their 17th annual event after the eclipse. The Fine Arts Festival is an annual event that hosts 85-95 artists, food vendors and live entertainment. It also features artist demonstrations and children's activities.

The Oregon Garden is hosting an event, Total Eclipse of the Garden, Saturday, August 19-Monday, August 21 that features camping and activities throughout the weekend leading into a viewing party after the eclipse on Monday. Guests will have the option to extend their camping on Friday, August 18, keeping them in town even longer. During the day, the Garden is purposely not planning a lot of activies on-site, in the hopes that people will take the

opportunity to explore the town of Silverton and the Silverton Fine Arts Festival. The local Kiwanis club will be cooking and serving breakfast to campers at the Garden as a fundraiser.

The Garden will have a few tours and educational activities during the day, and then outdoor movie showings in the Garden and designated camp fire areas with acoustic music at night. And after the eclipse on Monday, August 21, the event will feature a viewing party with live music, food, drinks, activities and more to encourage guests to stay an extra night and avoid mas exodus. Guests of the camping areas will be given the option to stay Monday night at no additional charge.

This event targets guests from all over the state and the country who are interested in witnessing a once-in-a-lifetime eclipse while enjoying multiple days in the historic town of Silverton. This is an opportunity for our town to reach people that have never traveled to Silverton before. We view this eclipse as a community event that can build on Silverton's tourism reputation for years to come.

A shuttle to transort folks from The Oregon Garden, the Silverton Fine Arts Festival and to other Silverton businesses and events, is crucial in making this eclipse a success for everyone involved. We want visitors to have the opportunity to explore our town and patron local businesses in a safe and hassle-free way. We're requesting $5,000 to be awarded so that we can hire three small shuttles to be in use Saturday, August 19 through Monday, August 21.

2) Project or Event Return on Investment:15 Points Total

a) Number of Overnight Stays: 5 Points

Demonstrate how many overnight stays your project will generate. Explain how you will track the overnight stays generated by your project.

This one-time-event is projected to bring in 819 overnight stays, 309 through the Oregon Garden Resort, and an additional 510 with the addition of camping at The Oregon Garden.

The Oregon Garden & Resort will track these overnight stays through a special Total Eclipse of the Garden package. The overnight stays at the Oregon Garden Resort will use the Resort's reservation program, and camping sites will use a special ticketing program designed for camping.

b) Preferrence for Off-Season Projects: 5 Points

Demonstrate how your project will increase the number of overnight stays during Silverton's off-season (November – March).

Although this will not increase overnight stays during the off-season, we are hoping an exception can be made for this one-timeevent that will produce a great amount of revenue for Silverton. This event gives us the chance to reach guests who have never been to Silverton before, and therefore has potential to increase overnight stays during the off-season.

To entice guests to come back during the off-season, we would include a flyer promoting Christmas in the Garden in the camping welcome packets that each guests receives when

checking in to their camping site. The flyer will include a 15 percent off booking discount for Christmas in the Garden overnight packages if they book during the eclipse weekend. The $200 printing and design cost will be covered by the Oregon Garden Resort.

c) Positive Rate of Return: 5 Points
Currently, each overnight stay generates approximately $13 in transient occupancy tax revenue. Demonstrate how the requested grant amount equals or exceeds the transient tax generated by the proposed project.

819 overnight stays will generate $10,647 transient occupancy tax revenue, more than double the amount of grant funding we have requested. 309 of these stays will take place at the Oregon Garden Resort, and 510 of them will be through on-site camping at The Oregon Garden.

This amount of revenue more than doubles the requested amount of $5,000.

More transient occupancy tax revenue will potentially be generated through the Christmas in the Garden discount offered to guests of Total Eclipse of the Garden. This revenue will be tracked by a special code through the Oregon Garden Resort's booking system.

3) Project or Event Personnel: 5 Points
Briefly describe your organizational structure. List the primary people involved, their positions, qualifications and experience.

Christine Diacetis, Regional Manager for The Oregon Garden & Resort. Christine has 15 years of corporate and agency marketing experience, specializing in special events for the food/beverage/hospitality industry, and eightyears of hospitality experience at the Oregon Garden Resort.

Brittney Hatteberg, Director of Marketing and Communications for Moonstone Hotel Properties. Brittney has more than nine years of corporate and agency marketing and public relations experience in hospitality, special events and consumer products.

Mary Ridderbusch-Shearer, Event Coordinator for The Oregon Garden. Mary has more than seven years of wedding and large-scale event planning and logistical experience.

Sara Hammond, Regional Marketing Manager for The Oregon Garden & Resort. Sara has over four years of corporate public relations and advertising experience specializing in digital media and events.

Stacy Palmer, Executive Director for the Silverton Chamber of Commerce & Visitor Center. Stacy has been with the Chamber for 17 years and specializes in tourism promotion for the community of Silverton, it's events and attractions.

Robin Mallory, President of the Silverton Arts Association. Robin has been on the Board of Directors for 4 years and works full time for Citizens Bank in Silverton. The primary purpose of the Association is to nurture, exhibit, inform, and promote appreciation and practice of the arts in the greater Silverton area. Through education, the Association will increase public understanding and practice of the arts for present and future generations.

4) Project or Event Timeline: 5 Points

Use of grant funds is limited to 12 months unless a longer period of time is requested and approved by City Council. Describe the schedule and timeline for theproject or event.

Planning for the Great American Eclipse has already begun for Silverton Chamber of Commerce, The Oregon Garden & Resort and the Silverton Fine Arts Festival. The events involved will take place between Saturday, August 19 and Monday, August 21. Since the eclipse is a one-time event, all planning and execution of work will be completed by the end of August 2017.

5) Project or Event Objectives: 15 Points

Describe how this project or event promotes tourism and economic development (directly and indirectly) in Silverton.

This event promotes tourism and economic development in Silverton, because it has the potentional to bring visitors to town that have likely not visited before. Through the use of a shuttle, we will be able to transport guests around town to all of our local businesses and events- sharing in the potential revenue that this eclipse will bring.

Total Eclipse of the Garden and the Silverton Fine Arts Festival will both be promoting their events through advertising, public relations and digital marketing. All of these efforts will help promote Silverton as a tourism destination for years to come.

6) Event/Project Budget:15 Points

On a separate page, provide a total budget for the event or project, including at a minimum, the following information:

a) List all funding sources for the project. In-kind labor and donated services can also be built into the total cost of the project and used as a funding source. The value of volunteer time for this grant period is $19.51 per hour according to the Independent Sector and The U.S. Bureau of Labor Statistics.

The Oregon Garden & Resort, Silverton Chamber of Commerce and Silverton Fine Arts Festival are requesting that the city of Silverton's Tourism Promotion Grant award this project the requested $5,000 to fund three small shuttles to be in use from Saturday, August 19 through Monday, August 21.

The Oregon Garden will provide a labor match for booking the shuttle, creating the schedules and checking in with the company each day. The labor match will cost $100.

The Oregon Garden Resort will pay $200 for printing and design costs associated with the flyer promoting a Christmas in the Garden package and off-season tourism.

b) Items that will be purchased with the requested grant funding (for example, if the request is to purchase radio or newspaper advertising for the event—list the specific stations or newspapers, size of advertisement, number of times the advertisement will be featured and any other pertinent details). If awarded funding, the grant agreement will require that the project or event be identified as sponsored by a Silverton Tourism Promotion Grant.Anyequipment proposed to be purchased or rented by grant funds must be identified and its use must be explained in narrative form.

We will hire three small shuttles from Mid-Columbia Bus Companyto transport guests from The Oregon Garden, the Silverton Fine Arts Festival and around the town of Silverton. We will also be working with New Creations Signs to produce directional signage leading visitors to the designated pick-up/drop-off locations.

c) List sources of in-kind (volunteer hours), donated services and other grant sources for this event/project.

d) The Oregon Garden will pay for the labor to book the shuttle, create the schedules and check in with the company during the weekend. The Oregon Garden Resort will pay for the design and printing of the flyer to be included in the camping packets encouraging guests to visit during Christmas in the Garden.

[This table shows suggested budget items and is not inclusive of possible event/project costs.]

	Requested Grant Amount	Real Dollar Match	In-Kind Labor and Donated Services	Total
Flyer Cost		$200		$200
Shuttle Cost	$4,000			$4,000
Shuttle Stop/Parking Signage Cost	$1,000			$1,000
Personnel Cost			$100	$100
Total Costs	$5,000	$200	$100	$5,300

SILVERTON TOURISM PROMOTION GRANT APPLICATION

Project or Event
Name Silverton Bike Parking Art Project

Sponsor
Name/Organization Silverton Art Association and the Silverton Bike Alliance

Mailing Address 303 Coolidge Street

City, State, Zip Silverton 97381

Project Coordinator/Contact Person Meghan McIntire Daytime Phone 503-873-2480

Contact Person Email info@silvertonarts.org

dg

Total Cost of Project: $ 5,200

Grant Amount Requested $ 1,100

Sponsor Dollar Match: $ -0-

In-kind Labor Match: $ 1,100

TOTAL POSSIBLE POINTS = 60

The Tourism Promotion Committee will give preferential consideration to grant applications that have a minimum score of 30 points.

1) Brief Project or Event Description: 5 Points
Provide a detailed description of the proposed event or project and targeted audience.

The project title: **Silverton Bike Parking Art Project** is proposed as a three year collaborative project between the Silverton Arts Association (SAA), City of Silverton, Silverton Bike Alliance, Friends of Eastside Trails (FOET, a not-for-profit recreation corporation), individual visual artists, and the Silverton Chamber of Commerce. Phase I has already been funded and completed during the first year of the project by the City of Silverton and FOET

The **Silverton Bike Parking Art** project has been designed to:

Promote bicycle tourism in the historic downtown area.

Introduce visual arts to the city-scape.

Create a walking tour opportunity to historic downtown visitors.

Enhance the recreational infrastructure for bicyclists.

Provide a new and innovative expansion of art space for SAA and working artists.

Expand economic opportunity for working visual artists locally.

2) **Project or Event Return on Investment: 15 Points Total**

a) Number of Overnight Stays: 5 Points

Demonstrate how many overnight stays your project will generate. Explain how you will track the overnight stays generated by your project.

Surveys will be provided to accommodation owners to determine if visitors have viewed the art. Questions will include reasons for coming to Silverton and whether they will recommend the Bike Art Tour to others. Tally's will provide a measure of occupancy participation.

b) Preferrence for Off-Season Projects: 5 Points

Demonstrate how your project will increase the number of overnight stays during Silverton's off-season (November – March).

See above for surveys. They will be dated and sorted by season.

c) Positive Rate of Return: 5 Points

Currently, each overnight stay generates approximately $13 in transient occupancy tax revenue. Demonstrate how the requested grant amount equals or exceeds the transient tax generated by the proposed project.

Downtown Merchants will be surveyed to determine if they have experienced additional commercial traffic from **The Silverton Bike Art Project**. The original art created for the displays will be shown in the Borland Gallery. Visitors coming to the gallery will be asked if they have seen the Bike Art displays. Tally's will be made from the surveys.

3) **Project or Event Personnel: 5 Points**
Briefly describe your organizational structure. List the primary people involved, their positions, qualifications and experience.

Management of the project will be the responsibility of SAA who will provide direction and supervision for participating organizations, volunteers, and artists. Additional information regarding the qualifications and experience of SAA will be provided if needed.

4) **Project or Event Timeline: 5 Points**
Use of grant funds is limited to 12 months unless a longer period of time is requested and approved by City Council. Describe the schedule and timeline for the project or event.

Art displays will be installed on the bike racks beginning July 15 and completed by September 1. Surveys will be conducted throughout the year.

5) **Project or Event Objectives: 15 Points**
Describe how this project or event promotes tourism and economic development (directly and indirectly) in Silverton.

See the "Event Outline" above.

6) Event/Project Budget: 15 Points

On a separate page, provide a total budget for the event or project, including at a minimum, the following information:

a) List all funding sources for the project. In-kind labor and donated services can also be built into the total cost of the project and used as a funding source. The value of volunteer time for this grant period is $19.51 per hour according to the Independent Sector and The U.S. Bureau of Labor Statistics.

b) Items that will be purchased with the requested grant funding (for example, if the request is to purchase radio or newspaper advertising for the event—list the specific stations or newspapers, size of advertisement, number of times the advertisement will be featured and any other pertinent details). If awarded funding, the grant agreement will require that the project or event be identified as sponsored by a Silverton Tourism Promotion Grant. Any equipment proposed to be purchased or rented by grant funds must be identified and its use must be explained in narrative form.

c) List sources of in-kind (volunteer hours), donated services and other grant sources for this event/project.

SEE ATTACHED BUDGET

SILVERTON BIKE ART PROJECT BUDGET

	Requested Grant Amount	Real Dollar Match	In-kind Labor and Donated Services	Total
Personnel Services	0	0	1,000	1,000
Project Administration Costs	0	0	500	500
Materials	600	0	0	600
Equipment/Supplies	500	0	500	1,000
Construction Costs	0	0	4,100	4,100
Event Costs	1,100	0	6,100	7,200
Transportation Costs				
Insurance Costs (if needed)				
Additional Expenses (List)				
Totals	1,100	0	6,100	7,200

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 8.1	**Topic:** 2016 Biosolids Dewatering Evaluation
	Report No.: 17-70	
	Agenda Type: **DISCUSSION/ACTION**	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Steve Starner	**Reviewed By:** Christian Saxe	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve the recommendations included in the December, 2016 Biosolids Dewatering Evaluation prepared by Keller and Associates, and authorize staff to proceed with a competitive procurement process for a Class B screw press dewatering project at the Silverton Wastewater Treatment Plant.

BACKGROUND:
The $13 million wastewater treatment plant upgrade in 1999 did not address any components of the 1982 anaerobic digestion system or solids disposal. By 2005 it was apparent that the solids handling system was approaching design capacity, and the supporting equipment was at the end of the design lifespan. Operators began on-site pilot testing of dewatering equipment in June, 2005. Additional analysis of dewatering technology was presented in the February, 2007, Wastewater System Facility Master Plan (HDR Engineering).

No additional work was performed until an anaerobic digestion upgrade was completed in 2013. Operators increased the storage capacity for liquid biosolids (450,000 gallons) by removing the rock media from abandoned trickling filter basins. Unfortunately, annual liquid biosolids storage still significantly exceeds available capacity by approximately 560,000 gallons. In liquid state, the biosolids contain 98% water. By thickening the material, approximately 20% of the water will be removed and recycled through the treatment process, greatly reducing the need for expensive offsite hauling.

The 2013 upgrade was funded by a $4 million loan. Based on the conclusions of the recent Biosolids Dewatering Evaluation, staff proposes to use the remainder of the loan ($603,000) to procure and install dewatering equipment to provide sufficient on-site capacity for the biosolids generated by the wastewater treatment process. The dewatering equipment capacity is based on a 20-year design life.

BUDGET IMPACT: **FY(s):** 2017-2018 **Funding Source:** WWTP Digester Project Fund

Attachments:
1. December, 2016, Biosolids Dewatering Evaluation
2. Water Quality Division staff memo

Biosolids Dewatering Evaluation Update

City of Silverton, Oregon

December 6, 2016

Biosolids Dewatering Evaluation Update

City of Silverton, Oregon

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APPENDICES

EXECUTIVE SUMMARY

The biosolids handling process at the City of Silverton, Oregon wastewater treatment plant (WWTP) thickens biosolids from the primary and secondary clarifiers, combines them in the anaerobic digesters for a minimum of 15 days to produce Class B biosolids, and then pumps the biosolids to storage lagoons. Ideally, liquid biosolids from the storage lagoons are land applied. Currently, the City of Silverton does not have adequate on-site storage for biosolids generated during the non-growing season. Excess liquid biosolids are hauled to the City of Salem for further solids handling and disposal when necessary to prevent emergency overflows of the plant's storage lagoons. In 2015, the City hauled 560,000 gallons of biosolids to the City of Salem to prevent overflows of their on-site storage. The City would prefer to not have to haul liquid biosolids to Salem to prevent on-site overflows. The City requested that Keller Associates, Inc. (Keller) evaluate various dewatering technologies and methods to upgrade their biosolids handling process. The City also requested Keller evaluate options for a Class A biosolids program.

Keller evaluated four (4) dewatering technologies for use at the Silverton WWTP. These included belt filter press (BFP), centrifuge, screw press, and rotary press. Bench and pilot tests were conducted to verify process performance. Data from these tests provided estimates for the installed performance including polymer usage, solids capture rates, and percent solids in dewatered cake. Operation and maintenance (O&M) considerations, ease of use and care, and overall advantages and disadvantages for each process were assessed. Additionally, a 20-year net present value (NPV) cost analysis was performed to compare overall costs (construction and annual O&M costs). A NPV analysis of the current biosolids handling process was also developed to provide a basis for comparison. The 20-year NPV cost analysis is shown in Table ES1.

The screw press has the lowest NPV. The centrifuge and rotary press have nearly the same NPV and are slightly higher than that of the screw press. The NPV costs are sensitive to the dewatered solids concentration because this directly affects the hauling costs. A centrifuge is not recommended because of the high power consumption and high vibrations and noise of a centrifuge. If the City would like to further compare the screw press and rotary press, Keller advises that the WWTP request an extended pilot study of the rotary press. The WWTP should perform their own testing on samples from the pilot study to independently verify the results. Based on this evaluation, Keller recommends the City design and construct a screw press dewatering facility as it has the lowest NPV, highest process performance, and City staff is familiar with the technology. The annual debt service on a 20-year, 1.6% interest rate loan (Oregon DEQ Clean Water State Revolving Fund Loan Program) for the estimated construction cost of a screw press would be $87,000 (Table ES.1). The combined annual cost of a screw press (debt service and O&M) would be approximately $275,000.

Table ES1 – Comparison of Dewatering Costs

Class B Dewatering Technologies								Current Biosolids Handling	
Belt Filter Press	**Total Cost[1]**	**Centrifuge**	**Total Cost[1]**	**Screw Press**	**Total Cost[1]**	**Rotary Press**	**Total Cost[1]**	**Land App & Salem Disposal**	**Total Cost[1]**
Belt Filter Press	$209,000	Centrifuge[2]	$380,000	Screw Press[2]	$325,000	Rotary Press[2]	$354,000		
Installation[3]	$388,000	Installation[3]	$270,000	Installation[3]	$327,000	Installation[3]	$322,000		
Building	$196,000	Building	$158,000	Building	$171,000	Building	$171,000		
Subtotal	$793,000	**Subtotal**	$808,000	**Subtotal**	$823,000	**Subtotal**	$847,000		
OH/Profit/Mob. (15%)	$119,000	OH/Profit/Mob. (15%)	$122,000	OH/Profit/Mob. (15%)	$124,000	OH/Profit/Mob. (15%)	$128,000	N/A	
Subtotal	$912,000	**Subtotal**	$930,000	**Subtotal**	$947,000	**Subtotal**	$975,000		
Contingency (30%)	$274,000	Contingency (30%)	$279,000	Contingency (30%)	$285,000	Contingency (30%)	$293,000		
Subtotal	$1,186,000	**Subtotal**	$1,209,000	**Subtotal**	$1,232,000	**Subtotal**	$1,268,000		
Engineering (20%)	$238,000	Engineering (20%)	$242,000	Engineering (20%)	$247,000	Engineering (20%)	$254,000		
Est. Construction Cost	**$1,424,000**	**Est. Construction Cost**	**$1,451,000**	**Est. Construction Cost**	**$1,479,000**	**Est. Construction Cost**	**$1,522,000**	**Est. Construction Cost**	**N/A**
Est. Annual Debt Service[4]	**$84,000**	**Est. Annual Debt Service[4]**	**$86,000**	**Est. Annual Debt Service[4]**	**$87,000**	**Est. Annual Debt Service[4]**	**$90,000**	**Est. Annual Debt Service[4]**	**N/A**
Electricity	$2,000	Electricity	$6,000	Electricity	$2,000	Electricity	$3,000		
Polymer	$38,000	Polymer	$38,000	Polymer	$46,000	Polymer	$45,000		
Hauling Costs[5]	$151,000	Hauling Costs[5]	$140,000	Hauling Costs[5]	$115,000	Hauling Costs[5]	$131,000	Hauling Costs[6]	$132,000
Labor	$32,000	Labor	$19,000	Labor	$19,000	Labor	$22,000	Labor	$4,000
Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000
Spare Parts	$6,000	Spare Parts	$3,000	Spare Parts	$4,000	Spare Parts	$1,000	Salem Tipping Fee[7]	$176,000
Est. Avg. Annual O&M	**$231,000**	**Est. Avg. Annual O&M**	**$208,000**	**Est. Avg. Annual O&M**	**$188,000**	**Est. Avg. Annual O&M**	**$204,000**	**Est. Avg. Annual O&M**	**$314,000**
Belt Filter Press Total 20-Year Estimated Present Value Cost	**$5,510,000**	**Centrifuge Total 20-Year Estimated Present Value Cost**	**$5,130,000**	**Screw Press Total 20-Year Estimated Present Value Cost**	**$4,810,000**	**Rotary Press Total 20-Year Estimated Present Value Cost**	**$5,140,000**	**Land App. & Salem Disposal Total 20-Year Estimated Present Value Cost**	**$5,560,000**
Est. Annual Cost (Debt Service and O&M)	**$315,000**	**Est. Annual Cost (Debt Service and O&M)**	**$294,000**	**Est. Annual Cost (Debt Service and O&M)**	**$275,000**	**Est. Annual Cost (Debt Service and O&M)**	**$294,000**	**Est. Annual Cost (Debt Service and O&M)**	**$314,000**

1 - The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in November 2016 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

2 - Skid mounted unit

3 - Assumed existing power source is sufficient for this project and motor starters can be added to an existing MCC; centrate pumping is not necessary; existing water lines have adequate pressure.

4 - Assumed 20-year loan with 1.6% interest rate (Oregon DEQ Clean Water State Revolving Fund Loan Program).

5 - Assumed $45/ton hauling cost for dewatered biosolids. Expected dewatered anaerobically digested solids: Belt Filter Press - 13%; Centrifuge - 14%; Screw Press - 17%; Rotary Press - 15%.

6 - Assumed liquid biosolids hauling cost of $0.0377/gal land applied and $0.038/gal hauled to Salem. Estimated biosolids at 3% solids.

7 - Assumed City of Salem tipping fee increases $0.01/gal every four (4) years.

Further reductions in hauling costs may be realized if the City were able to produce Class A biosolids, which have less restrictions on their use. The February 2007 wastewater master plan, prepared by HDR, Inc., recommended the City eliminate anaerobic digestion and implement a lime stabilization/pasteurization process with a dewatering screw press to achieve Class A biosolids. However, due to the digesters' urgent needs and capital cost of implementing a Class A biosolids process, the City elected to rehabilitate the anaerobic digesters in 2013.

Keller evaluated three (3) Class A biosolids technologies for the Silverton WWTP. The three Class A technologies were composting, heat drying, and lime stabilization/pasteurization. A 20-year NPV cost analysis was performed similarly to the one completed for the dewatering technologies. The cost analysis is shown in Table ES2. Lime stabilization/pasteurization resulted in the lowest 20-year net present value cost. The annual debt service on a 20-year, 1.6% interest rate loan (Oregon DEQ Clean Water State Revolving Fund Loan Program) for the estimated construction cost of a lime stabilization/pasteurization screw press would be $208,000 (Table ES.2). The combined annual cost of a screw press (debt service and O&M) would be $500,000. However, all three Class A options have more than two times the construction costs of the dewatering technologies. There are also a variety of operational and regulatory challenges associated with each of the three Class A methods. If Class A biosolids are desired, additional evaluation is recommended prior to installing a dewatering system. Most Class A processes require dewatering, so there may be options to phase in a Class A system in the future.

Table ES2 – Comparison of Class A Technology Costs

Class A Technologies								
Composting Option		**Total Cost[1]**	**Thermal Dryer Option**		**Total Cost[1]**	**Lime Stabilization/Pasteurization Screw Press Option**		**Total Cost[1]**
Composting System		$933,000	Dryer System[2]		$1,290,000	Class A Screw Press		$940,000
Installation[3]		$854,000	Installation[3]		$813,000	Installation[3]		$853,000
Covered Storage		$160,000	Building		$131,000	Building		$172,000
	Subtotal	$1,947,000		**Subtotal**	$2,234,000		**Subtotal**	$1,965,000
OH/Profit/Mob. (15%)		$293,000	OH/Profit/Mob. (15%)		$336,000	OH/Profit/Mob. (15%)		$295,000
	Subtotal	$2,240,000		**Subtotal**	$2,570,000		**Subtotal**	$2,260,000
Contingency (30%)		$672,000	Contingency (30%)		$771,000	Contingency (30%)		$678,000
	Subtotal	$2,912,000		**Subtotal**	$3,341,000		**Subtotal**	$2,938,000
Engineering (20%)		$583,000	Engineering (20%)		$669,000	Engineering (20%)		$588,000
	Subtotal	$3,495,000		**Subtotal**	$4,010,000		**Subtotal**	$3,526,000
Dewatering Unit[4]		$1,367,000	Dewatering Unit[4]		$1,367,000	Dewatering Unit		included above
Est. Construction Cost		**$4,862,000**	**Est. Construction Cost**		**$5,377,000**	**Est. Construction Cost**		**$3,526,000**
Est. Annual Debt Service[5]		**$286,000**	**Est. Annual Debt Service[5]**		**$317,000**	**Est. Annual Debt Service[5]**		**$208,000**
Electricity/Fuel/Wood		$106,000	Electricity/Fuel		$30,000	Electricity/Fuel/Chemicals		$127,000
Labor/Lab Testing		$104,000	Labor/Lab Testing		$65,000	Labor/Lab Testing		$53,000
Spare Parts		$11,000	Spare Parts		$15,000	Spare Parts		$10,000
Dewatering Unit		$73,000	Dewatering Unit		$73,000	Dewatering Unit		included above
Hauling		$66,000	Hauling		$22,000	Hauling		$102,000
Est. Avg. Annual O&M[6]		**$360,000**	**Est. Avg. Annual O&M[6]**		**$205,000**	**Est. Avg. Annual O&M[6]**		**$292,000**
Total 20-Year Estimated	**Composting Present Value Cost**	**$11,230,000**	**Total 20-Year Estimated**	**Thermal Dryer Present Value Cost**	**$9,010,000**	**Lime Stabilization/Pasteurization Screw Press Total 20-Year Estimated**	**Present Value Cost**	**$8,700,000**
Est. Annual Cost (Debt Service and O&M)		**$646,000**	**Est. Annual Cost (Debt Service and O&M)**		**$522,000**	**Est. Annual Cost (Debt Service and O&M)**		**$500,000**

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2- Thermal Dryer may increase return water temperature. Cooling tower is not included in this estimate.

3- Assumed existing power source is sufficient for project and motor starters can be added to an existing MCC; centrate pumping is not necessary; existing water lines have adequate pressure.

4- Dewatering of the biosolids is required prior to composting or thermal drying.

5 - Assumed 20-year loan with 1.6% interest rate (Oregon DEQ Clean Water State Revolving Fund Loan Program).

6 - Assumed $45/ton hauling cost. Expected Class A biosolids: Composting - 40%; Dryer - 90%; Screw Press - 25%

INTRODUCTION

The City of Silverton's WWTP is an extended aeration process with screening, primary clarification, activated sludge process tanks, secondary clarification, and ultraviolet disinfection facilities. HDR prepared a wastewater master plan in February 2007. This plan includes projected future design flows and organic loadings for the design year 2030, and an evaluation of existing facilities based on their age, physical condition and capacity to treat future design flows and loadings. Sludge from the primary clarifiers and the secondary clarifiers is currently thickened, combined in the anaerobic digesters, digested for a minimum of 15 days to produce Class B biosolids, and then pumped to storage lagoons. Liquid biosolids are land applied between April and October of every year, when the NPDES permit allows. During the winter, if necessary, the biosolids are hauled to the City of Salem for further solids handling and disposal.

The City does not have adequate storage on-site for the volume of biosolids generated during the non-growing season. If the liquid biosolids are dewatered, the City could realize savings in hauling costs. Further reductions in hauling costs may be realized if the City was able to produce Class A biosolids, which have less restrictions on their use. The 2007 master plan included recommendations to eliminate anaerobic digestion and implement dewatering with a screw press and a lime stabilization/pasteurization process to achieve Class A biosolids. The City elected to rehabilitate the anaerobic digesters in 2013 due to the digesters' urgent needs. The City tasked Keller Associates to perform an alternative analysis of several dewatering and Class A treatment options.

EXISTING SOLIDS HANDLING FACILITIES

The City's existing sludge treatment and storage facilities consist of the following:

- Gravity thickener for primary clarifier sludge. A hydrocyclone removes grit from the primary sludge prior to thickening. The gravity thickener is currently thickening the primary sludge from a solids concentration of approximately 0.25%-0.50% to a solids concentration of approximately 3.0%-4.0%.
- Dissolved air floatation tank (DAFT) for secondary clarifier sludge. The DAFT process thickens the secondary sludge from a solids concentration of approximately 0.25%-0.50% to a solids concentration of approximately 3.0%-4.0%.
- Anaerobic digesters for thickened primary and secondary sludge. Thickened primary and secondary sludge is pumped to two (2) anaerobic digesters, mixed, and stabilized for a minimum of 15 days at 35°C to achieve a minimum 38% volatile solids reduction to meet Class B biosolids requirements. Anaerobically digested sludge has a solids concentration of approximately 1.5%-2.0%.
- Lagoons and tank storage. Digested sludge is stored in two (2) sludge storage lagoons and an abandoned trickling filter structure until it is removed for land application or transportation to the City of Salem for disposal. According to WWTP staff, approximately 1.3 million gallons of sludge was land applied and approximately 560,000 gallons of sludge was taken to Salem for disposal in 2015. Biosolids removed from the storage lagoons are typically at a concentration of approximately 3.0% as the solids compact on the lagoon floor.

According to the master plan, the gravity thickener and the DAFT units are adequately sized for future estimated sludge production. Both units are performing well and the operators are satisfied with these

treatment technologies. Therefore, an investigation of alternative sludge thickening technologies was not performed as part of this study.

The master plan indicates that the two digesters are overloaded and provide no redundancy. The anaerobic digesters were updated as a part of a recent project in 2013. The work included upgrading the digester feed pumps, heat exchangers, and digester recycle pumps. Due to the expense of this upgrade, the City would prefer to continue using the anaerobic digesters for sludge stabilization in lieu of abandoning these structures. Therefore, the focus of this study is to determine the best technology for the City's anaerobically digested sludge.

Currently, the City does not have adequate onsite storage to store all their liquid biosolids until land application season. Any liquid biosolids that the City cannot store are hauled to the City of Salem for further processing and disposal. The City has a hauling contract to transport the liquid biosolids either for land application or to the City of Salem. The contract term typically lasts 3-5 years. There has been some variation in the hauling cost based on the cost of diesel at the time, but the City has not seen drastic increases in this cost. The City of Salem charges a tipping fee for the liquid biosolids of $0.05 per gallon. The City has an agreement with the City of Salem that began when the digesters were upgraded in 2013. Both digesters were offline during construction and the City hauled their sludge daily to the City of Salem for disposal. The agreement with the City of Salem has no end date and so the current excess liquid biosolids are taken to the City of Salem under this contract. The tipping fee price is written into the contract. The City of Salem has given no indication of ending or modifying the contract or price. The City of Salem currently accepts liquid biosolids from a variety of municipal sources. The tipping fee for those without a contract increased to $0.055 per gallon this year and will increase to $0.06 per gallon in 2017. A City of Salem plant operator estimates the tipping fee may increase by $0.01 per gallon every 3-5 years. The operator also said it was possible the cogeneration facilities at the plant would be upgraded and capacity increased. If this were to occur, the City of Salem would look to accept more fats, oils and grease (FOG) and less municipal biosolids, which do not produce as much biogas. One way for them to receive less municipal biosolids would be to increase the tipping fee. If the City of Salem chose to break their contract with the City of Silverton, the Silverton WWTP would be in a bind to quickly find another method to dispose of excess liquid biosolids to prevent emergency overflows.

BIOSOLIDS DEWATERING

According to the master plan, each sludge lagoon has a storage volume of approximately 320,000 gallons and the abandoned trickling filter structure has an approximate storage volume of 350,000 gallons. Current sludge production is approximately 5,000-10,000 gallons per day. In 2014, the City had to haul approximately 200,000 gallons of sludge to the City of Salem for further solids handling and disposal because there was not sufficient sludge storage capacity. In 2015, the City hauled 560,000 gallons to the City of Salem for disposal. Dewatering the sludge would reduce the required storage volume and also the hauling and disposal costs. Additionally, by reducing the size of the sludge storage area, the potential for odors from this area would decrease. The sludge storage lagoons could possibly be repurposed for future plant projects. For these reasons, an investigation of several dewatering technologies was performed.

Common dewatering technologies for the type and amount of solids generated at the Silverton WWTP include belt filter presses, centrifuges, screw presses, and rotary presses. Each of these technologies is described briefly in the following section and shown in Figure 1.

Belt Filter Press

The belt filter press (BFP) dewaters sludge through two sections of permeable belts – a gravity belt section followed by a roller section. In the gravity section, the sludge drops on the belt and liquids fall by gravity through the permeable belt. In the roller section, the sludge is compressed between two belts and rollers to force additional liquid through the belt. The rollers are typically different diameters to maximize the shearing action on the sludge and release some of the bound water. Polymer is added prior to the belt press to flocculate the sludge particles and to increase dewaterability of the sludge. The BFP typically requires more maintenance and generates more odors than the other three technologies.

Centrifuge

This technology uses centrifugal forces to separate the liquid from the solid particles. Polymer is added prior to the centrifuge in the sludge piping to flocculate the sludge particles and increase dewaterability of the sludge. Centrifugal forces are caused by high speed rotation, and the solids separate from the liquids through the difference in densities. Solids are forced to the outside of the bowl and a scroll conveyor moves the sludge out of the centrifuge. The liquids typically drain over a weir and into a plant drain. Centrifuges can cause high vibrations and noise due to their high speed.

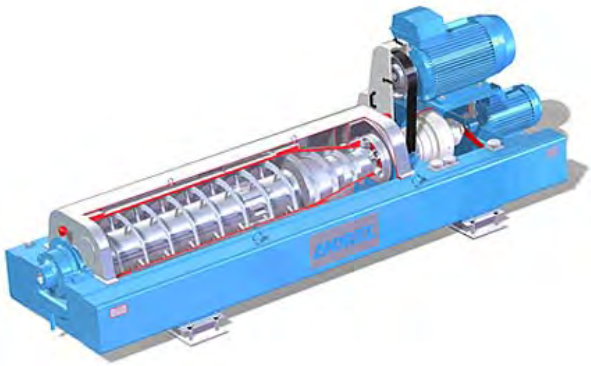
Screw Press

The screw press consists of a slowly rotating screw surrounded by a screen. The screw moves the sludge toward the exit while the screen allows water to pass downward out of the press. The distance between the screw and screen is reduced as the solids move toward the exit – effectively pushing the liquid out of the sludge. Polymer is added prior to the screw press to condition the sludge to increase solids removal. Because of the enclosed design, manufacturers have developed Class A biosolids treatment technology using a screw press, steam and lime. Steam is used to increase the temperature to meet pathogen reduction requirements and lime is used to raise the pH for vector attraction reduction.

Rotary Press

In a rotary press, sludge is fed into a channel and slowly rotates between two revolving screens. The solids accumulate in the channel until there is enough pressure to open the outlet gate. The friction of the screens and backpressure at the outlet cause the liquid to be pushed through the screens and collected in the discharge channel below the screens. Dewatered biosolids are extruded from the channel at the discharge chute. Polymer is added to condition the sludge to increase sludge dewaterability in the press.

(a) Belt Filter Press (courtesy of BDP Industries)



(b) Centrifuge (courtesy of Andritz Group)

(c) Screw Press (courtesy of BDP Industries)

(d) Rotary Press (courtesy of Fournier Industries, Inc.)

FIGURE 1 – Solids Dewatering Technologies

PILOT AND BENCH TESTING

Pilot and bench testing are helpful tools to compare treatment processes because the project specific WWTP sludge is analyzed and performance benchmarks can be approximated. Pilot and bench testing of several technologies was performed at the Silverton WWTP in 2005, 2009, 2015, and 2016. The 2005 and 2009 pilot tests were performed by FKC Co., Ltd. (FKC) based in Port Angeles, WA, using their screw press on WWTP sludge. The 2005 pilot tests focused on dewatering only; the 2009 pilot tests investigated the use of the screw press to meet Class A biosolids through the use of lime addition and steam treatment. The 2005 and 2009 pilot tests produced dewatered sludge with a solids concentrations ranging from 16.5%-28.2%. The pilot tests also demonstrated that Class A biosolids could be achieved through the addition of lime and steam without anaerobic digestion. Full reports of these pilot tests are found in Appendix A.

The 2015 and 2016 pilot tests focused on dewatering anaerobically digested biosolids. In April 2015, Fournier Industries, Inc. (Fournier) based in Quebec, Canada, piloted a rotary press as shown in Figure 2. Sludge samples were sent to Fournier's lab prior to the pilot study. Various polymers were bench tested to identify the optimal polymer to maximize cake solids and minimize polymer usage prior to the pilot test. The Fournier rotary press pilot study indicated that digested sludge could be dewatered to approximately 10% -15% solids. The optimal polymer dose was 41 active pounds (lbs.) of polymer per dry ton (DT) of solids. The complete pilot study report is in Appendix A.

FIGURE 2 – Fournier Rotary Press Pilot Unit

In June 2015, BDP Industries (BDP), based in Greenwich, NY, performed a screw press pilot test as shown in Figure 3 (next page). Again, the optimal polymer was selected through bench tests in BDP's lab prior to the pilot study. The pilot study resulted in cake solids ranging from 14.5%-20.5%. The pilot unit was able to maintain a fairly consistent concentration of 17% solids in the dewatered cake. The optimal polymer dosage was found to be approximately 40 lbs. of active polymer per DT of solids. The BDP pilot study report is in Appendix A.

In July 2015, the Andritz Group ran bench tests on digested sludge from the WWTP. The tests characterized the sludge, determined the optimal polymer, optimal polymer dose, and simulated three types of dewatering equipment - BFP, centrifuge, and screw press. The bench tests determined the sludge had a concentration of 1.5% total solids (TS) and 1.4% total suspended solids (TSS). Volatile solids (VS) made up 74.5% of the TS. Several cationic emulsion polymers were tested on the sludge. The optimal polymer dose was found to be 34.5 active lbs. of polymer/dry ton TS. The bench tests found their BFP would achieve 12±1% dewatered cake; their centrifuge would achieve 14±1% dewatered cake; and their screw press would be between that of a BFP and a centrifuge. The bench testing report is included in Appendix A.

In April 2016, Prime Solutions, Inc. performed a rotary press pilot test. Two different polymers were tested during the pilot study. An optimal polymer dose was not given for the pilot study, but polymer dosage ranged from 12 lbs./DT to 38 lbs./DT and 38 lbs./DT corresponded with the highest percent solids dewatered cake. The average solids concentration of the pilot study was 17.5%.

FIGURE 3 – BDP Screw Press Pilot Unit

Although pilot studies provide a more realistic idea of expected performance, they are still performed on a relatively small sample over a short amount of time. There are many variables involved and the pilot test operators typically vary these quite frequently. Also, these pilot tests are performed by the manufacturers with various levels of experience. Actual equipment can also be a slightly different size than the pilot, which can cause different performance than the pilot unit; however, the City's sludge production is such that many of the pilot units should be close to the full size equipment. It is important to remember that pilot study results are not a guarantee of actual installation performance.

DEWATERING EQUIPMENT EVALUATION

The following design criteria were used to evaluate the dewatering technologies:

- 25,000 gallons per day of anaerobically digested sludge at 1.5% solids.
- 8 hours a day, 5 days a week operation.
- A pole barn will be built to house the dewatering equipment and the old trickling filter will be covered to store dewatered biosolids.
- A small amount of sludge storage is necessary due to the intermittent, 40 hours per week, operation of the dewatering equipment. One of the sludge storage lagoons (~320,000 gallon capacity) can provide adequate sludge storage prior to dewatering (the other lagoon can be repurposed).
- Due to the available sludge storage volume, a redundant dewatering device was not included. However, the manufacturer's recommended spare parts were included in the cost.
- The dewatered solids are transported to the sludge storage container via a conveyor. The container can be repositioned periodically using a fork lift.
- All dewatered solids will be hauled off site by the City.
- A rotary lobe pump is included as well as a spare on the shelf to provide pumping of the sludge to the dewatering device.

Table 1 provides estimated present value costs for the technologies and continuing existing solids handling operation at the plant. Equipment capital costs are based primarily on vendor quotes. Quotes were received from BDP for the BFP, Andritz Group for the centrifuge, FKC and BDP for the screw press, and Fournier and Prime Solutions for the rotary press. Installation costs include ancillary equipment not included in the manufacturers' quotes and it was assumed that the installation would cost 30% of the equipment capital costs. The building cost includes a pole barn building and covering the old trickling filter. It is assumed the trickling filter will be repurposed as dewatered solids storage. The trickling filter will store six months of dewatered biosolids assuming they are 15% solids. Building area is based on equipment footprint and necessary maintenance clearances. The annual O&M costs in Table 1 are based on a 20-year life cycle analysis. Electrical usage, estimated labor to run the dewatering equipment, and parts required were provided by the manufacturers. Polymer dosage and dewatered solids percent solids were based on bench and pilot testing. The following percent solids were assumed for each technology, 13% for BFP, 14% for centrifuge, 17% for screw press, and 15% for rotary press. The City provided estimates for the lab testing fees, liquid biosolids hauling costs including labor, and City of Salem tipping fees. It was assumed the tipping fees would increase by $0.01 per gallon every four years. The estimated total present value cost is based on using a real discount rate of 1.2% (from the 2016 Whitehouse Office of Management and Budget [OMB]) for the 20-year period.

Table 2 lists advantages and disadvantages for each of the four dewatering technologies based on bench and pilot test results, capital costs, and expected annual operation and maintenance (O&M) costs, including disposal costs.

Table 1 – Comparison of Dewatering Costs

Class B Dewatering Technologies								Current Biosolids Handling	
Belt Filter Press	**Total Cost[1]**	**Centrifuge**	**Total Cost[1]**	**Screw Press**	**Total Cost[1]**	**Rotary Press**	**Total Cost[1]**	**Land App & Salem Disposal**	**Total Cost[1]**
Belt Filter Press	$209,000	Centrifuge[2]	$380,000	Screw Press[2]	$325,000	Rotary Press[2]	$354,000		
Installation[3]	$388,000	Installation[3]	$270,000	Installation[3]	$327,000	Installation[3]	$322,000		
Building	$196,000	Building	$158,000	Building	$171,000	Building	$171,000		
Subtotal	$793,000	**Subtotal**	$808,000	**Subtotal**	$823,000	**Subtotal**	$847,000		
OH/Profit/Mob. (15%)	$119,000	OH/Profit/Mob. (15%)	$122,000	OH/Profit/Mob. (15%)	$124,000	OH/Profit/Mob. (15%)	$128,000	N/A	
Subtotal	$912,000	**Subtotal**	$930,000	**Subtotal**	$947,000	**Subtotal**	$975,000		
Contingency (30%)	$274,000	Contingency (30%)	$279,000	Contingency (30%)	$285,000	Contingency (30%)	$293,000		
Subtotal	$1,186,000	**Subtotal**	$1,209,000	**Subtotal**	$1,232,000	**Subtotal**	$1,268,000		
Engineering (20%)	$238,000	Engineering (20%)	$242,000	Engineering (20%)	$247,000	Engineering (20%)	$254,000		
Est. Construction Cost	**$1,424,000**	**Est. Construction Cost**	**$1,451,000**	**Est. Construction Cost**	**$1,479,000**	**Est. Construction Cost**	**$1,522,000**	**Est. Construction Cost**	**N/A**
Est. Annual Debt Service[4]	**$84,000**	**Est. Annual Debt Service[4]**	**$86,000**	**Est. Annual Debt Service[4]**	**$87,000**	**Est. Annual Debt Service[4]**	**$90,000**	**Est. Annual Debt Service[4]**	**N/A**
Electricity	$2,000	Electricity	$6,000	Electricity	$2,000	Electricity	$3,000		
Polymer	$38,000	Polymer	$38,000	Polymer	$46,000	Polymer	$45,000		
Hauling Costs[5]	$151,000	Hauling Costs[5]	$140,000	Hauling Costs[5]	$115,000	Hauling Costs[5]	$131,000	Hauling Costs[6]	$132,000
Labor	$32,000	Labor	$19,000	Labor	$19,000	Labor	$22,000	Labor	$4,000
Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000	Lab Testing	$2,000
Spare Parts	$6,000	Spare Parts	$3,000	Spare Parts	$4,000	Spare Parts	$1,000	Salem Tipping Fee[7]	$176,000
Est. Avg. Annual O&M	**$231,000**	**Est. Avg. Annual O&M**	**$208,000**	**Est. Avg. Annual O&M**	**$188,000**	**Est. Avg. Annual O&M**	**$204,000**	**Est. Avg. Annual O&M**	**$314,000**
Belt Filter Press Total 20-Year Estimated Present Value Cost	**$5,510,000**	**Centrifuge Total 20-Year Estimated Present Value Cost**	**$5,130,000**	**Screw Press Total 20-Year Estimated Present Value Cost**	**$4,810,000**	**Rotary Press Total 20-Year Estimated Present Value Cost**	**$5,140,000**	**Land App. & Salem Disposal Total 20-Year Estimated Present Value Cost**	**$5,560,000**
Est. Annual Cost (Debt Service and O&M)	**$315,000**	**Est. Annual Cost (Debt Service and O&M)**	**$294,000**	**Est. Annual Cost (Debt Service and O&M)**	**$275,000**	**Est. Annual Cost (Debt Service and O&M)**	**$294,000**	**Est. Annual Cost (Debt Service and O&M)**	**$314,000**

1 - The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in November 2016 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

2 - Skid mounted unit

3 - Assumed existing power source is sufficient for this project and motor starters can be added to an existing MCC; centrate pumping is not necessary; existing water lines have adequate pressure.

4 - Assumed 20-year loan with 1.6% interest rate (Oregon DEQ Clean Water State Revolving Fund Loan Program).

5 - Assumed $45/ton hauling cost for dewatered biosolids. Expected dewatered anaerobically digested solids: Belt Filter Press - 13%; Centrifuge - 14%; Screw Press - 17%; Rotary Press - 15%.

6 - Assumed liquid biosolids hauling cost of $0.0377/gal land applied and $0.038/gal hauled to Salem. Estimated biosolids at 3% solids.

7 - Assumed City of Salem tipping fee increases $0.01/gal every four (4) years.

Table 2 – Advantages and Disadvantages of Dewatering Technologies

	Belt Filter Press	Centrifuge	Screw Press	Rotary Press
Advantages	• Lowest capital cost • Low power consumption • Quick start up and shut down	• Handles high flow rates • Low operator attention required • Small footprint • Enclosed operation (reduced odor potential)	• Highest dewatered solids concentration • Low power consumption • Low operator attention required • Lowest annual O&M costs • Small footprint • Enclosed operation (reduced odor potential) • Quick start up and shut down • Certain models can produce Class A	• Low power consumption • Small footprint • Enclosed operation (reduced odor potential) • Quick start up and shut down • Few spare parts needed
Disadvantages	• Requires more maintenance and operator attention • Odor control required • Large amount of wash water required • Large footprint • Lowest dewatered solids concentration	• Highest power consumption • High vibration and noise • High shear forces (can lead to higher recycle concentrations)	• Highest polymer usage • Low flow capacity (design may require multiple units) • Large clearance required	• Highest capital cost • Low flow capacity (design requires multiple units)

The screw press has the lowest estimated present value cost among the four dewatering technologies and the current method of disposal. The primary advantage of the screw press is its high dewatered solids concentration, which results in the lowest estimated annual hauling cost. The June 2015 pilot test demonstrated that the screw press can consistently produce dewatered cake with a solids concentration of 17% and as high as 20%. The life cycle analysis is sensitive to the dewatered solids concentration because it is directly related to the hauling costs. The centrifuge and rotary press have nearly the same NPV and are slightly higher than that of the screw press. A centrifuge is not recommended because of the disadvantages listed in Table 2 and WWTP staff unfamiliarity with the technology. If the City would like to further compare the screw press and rotary press, Keller advises that the WWTP request an extended pilot study of the rotary press. The WWTP should independently verify the results of the pilot study by testing samples from the pilot study. Based on this current evaluation, Keller recommends the City move forward with a screw press dewatering facility. The annual debt service on a 20-year, 1.6% loan (Oregon DEQ Clean Water State Revolving Fund Loan Program) for the estimated construction cost of a screw press would be $87,000 (Table 1). The combined annual cost (debt service and O&M) would be $275,000.

The cost estimates in Table 1 assume the equipment is either purchased as separate components or as a skid mounted unit (see Note 2). An additional option is to purchase the equipment on a trailer. It is most common to purchase the equipment separately, have manufacturers deliver components individually, and a general contractor installs the components. For a skid mounted unit, one manufacturer mounts the components of the system on a skid and a general contractor connects the plant piping and electrical to the skid. The trailer unit is similar to a skid mounted unit, except the components are mounted inside a trailer. The trailer is then connected to the plant piping and electrical. A trailer unit is typically recommended if it is advantageous to move the dewatering equipment to other sites. While a trailer unit would not need a building, there is less room for operator maintenance. The trailer would still need covered storage and loading area for dewatered biosolids. Prime Solutions' quotes estimate the cost of a trailer mounted unit, in comparison to a skid mounted unit, to be $114,000 more. This is approximately equivalent to the cost estimate for a dewatering building. Both options would still require a covered storage area. Keller recommends a skid mounted unit over the other two options to reduce the installation cost and also provide space for maintenance.

CLASS A BIOSOLIDS

The anaerobic digesters at the Silverton WWTP stabilize the sludge to produce Class B biosolids. Class B biosolids must be land applied in accordance with Federal regulations at agronomic rates. Class A biosolids have fewer restrictions and can potentially be sold as fertilizer or given away. Of the Class A treatment technologies available, composting, thermal drying, and lime stabilization/pasteurization appear best suited for the Silverton WWTP. These technologies are described briefly below.

Composting

Composting is a relatively simple process where biosolids are aerobically treated at thermophilic temperatures (55°C) caused by the decomposition of organic material. Typically, a bulking material such as wood chips is used to achieve the necessary porosity and moisture content to completely compost the biosolids. The biosolids should be dewatered to between 16-24% solids prior to composting for optimal operation. The primary advantage of composting is that the end product is familiar to many people and

can be used as a soil amendment. Another advantage is that composting can begin with relatively minimal capital cost and, if successful, can expand incrementally. However, it does require land and high operator attention. Composting also requires a bulking agent, increasing the amount of solids. In addition, variations in weather, mixing, and inadequate monitoring can lead to difficulty in meeting Class A biosolid requirements. Moving the composting operation indoors (in vessel) provides more consistent results and reduces odors, but is more expensive. This evaluation focuses on in-vessel composting based on discussions with WWTP staff about odor and consistency in meeting Class A biosolid requirements. The compost would be suitable for farmland application. Further processing of curing and screening would be required to produce a mature retail compost product.

Thermal Drying

Thermal drying is a process that uses heat to remove the water from biosolids. Dryers typically require that sludge be dewatered to 10%-30% solids prior to the dryer. Indirect dryers keep biosolids separated from the heating medium (generally steam or oil) with metal walls. With direct dryers, the incoming biosolids are in direct contact with the heating medium (hot gases) in the dryer. The typical heat drying process increases solids concentrations to 90% or higher. This provides significant volume reduction, which reduces hauling costs and storage. However, there is a risk for fires or explosions in dryers and safety precautions must be taken into account. Dust can be an issue because the end product has low moisture content and odor control is often required. The process may increase return water temperature and require a cooling tower. The technology evaluation was based on an indirect dryer.

Lime Stabilization/Pasteurization

Lime stabilization/pasteurization is performed in-vessel to control the mixing and heating conditions; however, unlike heat drying, the amount of solids produced increases due to lime addition. Lime stabilization raises the pH of the biosolids to greater than 12 for vector attraction reduction. Steam is injected into the vessel to pasteurize/heat the solids for pathogen reduction. The equipment evaluation is based on the FKC screw press, which utilizes lime and heat pasteurization to meet Class A biosolids requirements.

CLASS A EQUIPMENT EVALUATION

The following design criteria were used to evaluate the Class A biosolids treatment technologies:

- 3,100 lbs. per day of dry solids that have been treated by the anaerobic digesters.
- 8 hours a day, 5 days a week operation.
- Pole barn would be used to house equipment.
- A redundant Class A treatment unit was not included; however, the manufacturer's recommended spare parts were included.
- Class A biosolids will be hauled off site by the City.

Table 3 compares estimated present value costs for the three Class A technologies. The composting and thermal drying processes include dewatering with a screw press prior to processing. The lime stabilization/pasteurization screw press dewaters biosolids in same unit used to meet Class A requirements. Quotes were received from Engineered Compost Systems and BDP for composting, RDP Technologies Inc. for thermal drying, and FKC for lime stabilization/pasteurization. Capital costs are based

on vendor quotes. Manufacturers provided estimates for electricity, fuel, chemicals, labor, and parts. Hauling costs to remove the Class A biosolids were included, although they may be able to be distributed from the WWTP without hauling. However, prior to investing in Class A technology, further investigation of potential end users of Class A biosolids should be completed to gauge local interest. The estimated total present value cost is based on using a real discount rate of 1.2% (from the 2016 Whitehouse OMB) during the 20-year period. Table 4 lists typical advantages and disadvantages of each of the Class A technologies.

Table 3 – Comparison of Class A Technology Costs

Class A Technologies								
Composting Option		**Total Cost[1]**	**Thermal Dryer Option**		**Total Cost[1]**	**Lime Stabilization/Pasteurization Screw Press Option**		**Total Cost[1]**
Composting System		$933,000	Dryer System[2]		$1,290,000	Class A Screw Press		$940,000
Installation[3]		$854,000	Installation[3]		$813,000	Installation[3]		$853,000
Covered Storage		$160,000	Building		$131,000	Building		$172,000
	Subtotal	$1,947,000		**Subtotal**	$2,234,000		**Subtotal**	$1,965,000
OH/Profit/Mob. (15%)		$293,000	OH/Profit/Mob. (15%)		$336,000	OH/Profit/Mob. (15%)		$295,000
	Subtotal	$2,240,000		**Subtotal**	$2,570,000		**Subtotal**	$2,260,000
Contingency (30%)		$672,000	Contingency (30%)		$771,000	Contingency (30%)		$678,000
	Subtotal	$2,912,000		**Subtotal**	$3,341,000		**Subtotal**	$2,938,000
Engineering (20%)		$583,000	Engineering (20%)		$669,000	Engineering (20%)		$588,000
	Subtotal	$3,495,000		**Subtotal**	$4,010,000		**Subtotal**	$3,526,000
Dewatering Unit[4]		$1,367,000	Dewatering Unit[4]		$1,367,000	Dewatering Unit		included above
Est. Construction Cost		**$4,862,000**	**Est. Construction Cost**		**$5,377,000**	**Est. Construction Cost**		**$3,526,000**
Est. Annual Debt Service[5]		**$286,000**	**Est. Annual Debt Service[5]**		**$317,000**	**Est. Annual Debt Service[5]**		**$208,000**
Electricity/Fuel/Wood		$106,000	Electricity/Fuel		$30,000	Electricity/Fuel/Chemicals		$127,000
Labor/Lab Testing		$104,000	Labor/Lab Testing		$65,000	Labor/Lab Testing		$53,000
Spare Parts		$11,000	Spare Parts		$15,000	Spare Parts		$10,000
Dewatering Unit		$73,000	Dewatering Unit		$73,000	Dewatering Unit		included above
Hauling		$66,000	Hauling		$22,000	Hauling		$102,000
Est. Avg. Annual O&M[6]		**$360,000**	**Est. Avg. Annual O&M[6]**		**$205,000**	**Est. Avg. Annual O&M[6]**		**$292,000**
Total 20-Year Estimated	**Composting Present Value Cost**	**$11,230,000**	**Total 20-Year Estimated**	**Thermal Dryer Present Value Cost**	**$9,010,000**	**Lime Stabilization/Pasteurization Screw Press Total 20-Year Estimated**	**Present Value Cost**	**$8,700,000**
Est. Annual Cost (Debt Service and O&M)		**$646,000**	**Est. Annual Cost (Debt Service and O&M)**		**$522,000**	**Est. Annual Cost (Debt Service and O&M)**		**$500,000**

1 - The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in November 2016 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

2- Thermal Dryer may increase return water temperature. Cooling tower is not included in this estimate.

3- Assumed existing power source is sufficient for project and motor starters can be added to an existing MCC; centrate pumping is not necessary; existing water lines have adequate pressure.

4- Dewatering of the biosolids is required prior to composting or thermal drying.

5 - Assumed 20-year loan with 1.6% interest rate (Oregon DEQ Clean Water State Revolving Fund Loan Program).

6 - Assumed $45/ton hauling cost. Expected Class A biosolids: Composting - 40%; Dryer - 90%; Screw Press - 25%

Table 4 – Advantages and Disadvantages of Class A Technologies

	Composting	Thermal Drying	Lime Stabilization/ Pasteurization
Advantages	• Wide public acceptance • Can start small and increase if successful	• Largest volume reduction of biosolids • High quality end product	• Lowest capital cost • Raises the soil pH - may be a cost savings for farmers • Can dewater biosolids in same unit used to meet Class A requirements • Can be used as a backup for anaerobic digester treatment
Disadvantages	• Large footprint • Large amount of maintenance required • Odor control required • Consistent bulking agent is required (e.g. moisture content and diameter of wood chips) • High cost for bulking agent • Requires dewatering prior to processing	• Fire and dust safety hazards • Odor control required • Relatively complex system • High energy usage • Requires dewatering prior to process • May increase return water temperature and require a cooling tower	• Adding lime creates additional biosolids • Odor control potentially required • Lime safety hazards • High cost for fuel/chemical additions

A lime stabilization/pasteurization screw press has the lowest estimated present value cost. As noted in Table 3, a lime/pasteurization screw press increases the mass of biosolids produced, requires lime and lime safety precautions, can have odor control concerns, and has fairly high annual O&M costs. Thermal dried solids can have dust, fire hazard, and odor issues, but produces a high quality end product and has significant volume reduction. Compost is a much more recognizable product and a composting system can start small if only a portion of the sludge is treated to Class A. However, composting has the highest estimated present value cost and is operator intensive. Due to all of these considerations for each technology, prior to moving forward with a Class A technology, additional evaluation is recommended. The annual payment on a 20-year, 1.6% loan (Oregon DEQ Clean Water State Revolving Fund Loan Program) for the estimated construction cost of a lime stabilization/pasteurization screw press would be $208,000 (Table 3). The combined annual cost of a screw press (loan payment and O&M) would be $500,000.

RECOMMENDATIONS

It is recommended the City move forward with a biosolids dewatering system. A screw press is recommended for the Silverton WWTP to dewater the anaerobically digested solids as it is expected to consistently achieve the highest solids concentration and have the lowest overall present value cost including the lowest average annual cost. At this time, based on life cycle cost, the City should install a dewatering unit, but not pursue Class A technology. If Class A biosolids are a goal for the plant, additional evaluation is recommended prior to moving forward with a Class A technology at a future date.

ADDITIONAL CONSIDERATIONS

When installing a biosolids dewatering system it may be necessary to pump the centrate/pressate flow from the dewatering unit to the head of the plant or the aeration basins. The impact of this water on the WWTP processes should be evaluated. This water can contribute a significant organic or nutrient load to the plant, and it may be beneficial to store the centrate/pressate flow and bleed it into the plant during non-peak load periods. If the plant does change the biosolids handling process, the biosolids management plan will need to be updated and sent to DEQ for review and approval.

According to the 2007 master plan, the two current digesters are overloaded and provide no redundancy. Initial planning for a third digester has been started. There are Class A technology options that are capable of producing Class A biosolids from undigested primary and secondary sludge. If the City were to move forward with Class A technology, the existing digesters may not be necessary to the solids handling system depending on the Class A technology chosen. Further evaluation of the solids handling system and its future goals should be completed prior to any digester upgrades being initiated.

If the City moved forward with Class A technology, the plant would need to go through regulatory permitting updates before the plant could produce Class A biosolids. The plant cannot be approved and certified for Class A biosolids until DEQ updates their permit, which could be a lengthy process.

APPENDIX A – Pilot and Bench Test Reports

FKC CO., LTD.
2708 West 18th Street
Port Angeles, WA 98363

(360) 452-9472
FAX (360) 452-6880

By e-Mail

June 22, 2005

Steve Starner
306 S. Water Street
Silverton, OR 97381

RE: FKC Pilot Sludge Dewatering Trial Report

Dear Steve:

On behalf of FKC, I thank you for your interest in FKC's dewatering equipment and the opportunity to demonstrate its capabilities at Silverton Waste Water Treatment Plant. I also appreciated the help of your staff at this facility; they were very supportive in connection with the trial.

Primary Purposes of the On-Site Dewatering Trial

The three primary purposes of the on-site trial are:

(1) To introduce and demonstrate the applicability of FKC Screw Press technology for your application.

(2) To verify performance and to gather data to assist FKC in the scale up and design of full-scale equipment for possible use in this application.

(3) To provide you an opportunity to observe and assess the potential operational, maintenance, and performance benefits of FKC Screw Press technology in this application.

Overview of the FKC On-Site Trial Unit

General Layout and Process Flow

A simple drawing showing major external dimensions of the trial unit trailer is enclosed for your reference. In addition, a general arrangement drawing of the trial unit equipment and a basic flow diagram of the system also are enclosed for your reference.

Sludge Feed to the Trailer

For this pilot study, the sludge was pumped and mixed at given primary to secondary mix ratios in a 500-gallon holding tank. From there it was pumped into an agitated holding tank located in the back to the trailer. For TR – 9 and TR – 10 lime was weighed and added into this tank according to the consistency of the sludge and the known volume of the tank. Prior to beginning each trial run the precise level of sludge in the tank was measured. At the completion of each trial run the level of sludge remaining in the tank was measured.

The difference between the starting and ending tank levels equaled the volume of sludge pumped to the trial unit screw press during each trial run. This information, together with sludge consistency, polymer dosage, and percent polymer makedown information was used by FKC to determine polymer consumption on a dry pounds per bone-dry ton of sludge basis.

Sludge Feed Out of the Sludge Holding Tank

Sludge was pumped with a progressing cavity pump out of the sludge holding tank and into the flocculation tank located in the middle of the trailer, just in front of the screw press. The sludge flow was controlled with a mechanical speed variator mounted on the pump. The mechanical variable speed drive setting on the sludge feed pump remained unchanged during each trial. Conducting a trial without adjusting the sludge feed pump setting was done intentionally to attain a level of control relating to sludge conditioning (polymer dosage rate) during the trial.

Polymer Feed

Polymer was made down in and pumped out of two identical polymer tanks. Both tanks were filled with a cationic polymer used as a flocculent. Variable speed diaphragm-type polymer pumps were used to pump polymer from the polymer tanks into the two-stage flocculation tank.

Prior to beginning each trial run the precise level of polymer in each polymer tank was measured and recorded. At the completion of each trial run, the level of the polymer remaining in each tank was measured and recorded. The difference between the starting and ending tank levels equaled the volume of each polymer used during each trial run.

Flocculation

The flocculation tank has two separate, individually agitated chambers. The polymer was added to the sludge before the chambers of the flocculation tank. As the sludge / polymer mixture moved up through one of the chambers (in a bottom-to-top direction) additional agitation and time were used to complete the flocculation process. The flocculated sludge overflowed the flocculation tank chamber into a flexible hose and flowed through this hose into the headbox of the trial unit screw press.

Screw Press Headbox Level Control

The screw press was run continuously at a constant speed and stable headbox level for 15 to 30 minutes (depending on screw press speed) prior to, and for the duration of each timed trial run. The screw press headbox level was controlled between the maximum and minimum headbox level set points by automatic on-off operation of the sludge and polymer pumps. A three-electrode headbox level controller automatically switched on the sludge pump, polymer pumps, and flocculation tank agitators when the minimum headbox level was reached. When the level of sludge in the headbox reached the maximum level, the sludge pump, polymer pumps, and flocculation tank agitators would switch off. To maintain the same polymer addition rates throughout a test, no speed adjustments were made to any of the pumps.

Dewatered Cake Solids

During each timed trial run, all of the dewatered cake solids discharged from the screw press were collected in a white plastic bin placed directly beneath the discharge box of the screw press. The bin was emptied prior to the start of each trial run. At the end of each trial run, the bin containing the dewatered cake solids was weighed on a scale and the weight of the empty bin was subtracted to determine the weight of the cake solids dewatered and discharged from the press during each trial run.

After weighing the bin, samples of dewatered cake solids were collected from random locations throughout the bin. The samples were used for consistency analysis utilizing moisture meters located in the laboratory area.

Overview of the On-Site Trial

The fundamental design and operating parameters having the most direct impact on the dewatering performance of FKC Screw Press technology in this application are the screw speed, screw design and chemical addition. The on-site trial consisted of a series of separate timed trial runs. Each of the trial runs had a specific purpose related to identifying and quantifying one or more of the effects of these fundamental design and operating parameters on dewatering performance.

Prior to each trial run the trial unit screw press was set up to run under the specific operating parameters established for the particular trial run (e.g. screw design, screw speed, heat addition, etc.). Once the operational parameters were established, the trial unit was operated under stable conditions until steady state performance was achieved. After steady state performance was achieved, the unit was temporarily stopped while it was washed down, sludge and polymer tank levels were recorded, and the plastic bin beneath the discharge box of the screw press was emptied.

Each trial run was made by operating the trial unit screw press under the known, stable operating parameters established for the particular run for a period of 15 to 30 minutes. The operating parameters for each trial run were recorded, and at appropriate times prior to, during, or after each trial run operating data and samples were collected.

Successive trial runs were made after a change in one of the design or operational parameters (e.g. a faster or slower screw speed, a different polymer dosage, steam and lime addition, etc.) to determine the effect of the change made.

Summary of On-Site Trial Runs

A summary of the data collected is contained in the FKC on-site trial data sheets enclosed with this report.

Following is a summary of the objectives of trial runs TR-1 through TR-10 performed June 14 thru June 16th, 2005 and observations made during the runs. TR –1 through TR – 6 were performed with a two stage, variable-pitch screw (screw design "40T"). The remaining trial runs TR-6 thru TR-10 were performed with a two stage, variable-pitch screw (screw design "X"). The chemical conditioning used for the trial runs averaged 22 lbs/dry ton of a cationic polymer. The tests which simulated FKC's Class A biosolids, TR – 9 and 10 used 42 lbs. / dry ton of polymer.

TR-1

TR-1 was performed on the blend of 50% primary and 50% secondary. The screw press was able to achieve 25.9% dry cake with a capacity of 13.4 dry Kg / hr. The polymer dosage was 16.3 lbs / DT of cationic polymer. This test was performed using the emulsion polymer Ciba 7878.

TR-2

TR-2 was made under the same operating conditions as TR-1, but with a slower screw speed of 0.5 rpm. This was to see is how slower operating speeds affects the outlet consistency and capacity of the screw press. As expected the outlet consistency increased slightly from TR-1 to 27.1% solids. The capacity also decreased as anticipated from TR-1 to 12.7 dry kg/hr. Hence faster operating speeds produce higher capacities with lower outlet consistencies.

TR-3

For TR – 3 the screw speed was again lowered to 0.3 RPM. At this speed we saw no increase in cake solids. The capacity did decrease at the lower speed to 6.9 dry Kg/hr.

TR-4

For the final test with the 50P:50S blend the screw press speed was increased to 1.1 RPM. As expected the capacity increased with the faster speed, while the cake dryness decreased. The capacity was measured at 16.5 dry Kg/hr. and the cake solids were measured to be 21.5%.

TR-5

For TR – 5 the sludge was changed to test 100% secondary sludge. For this sludge the screw speed was set at 0.3 RPM, which resulted in cake solids of 18.9 % and a capacity of 4.8 dry Kg/Hr. Polymer consumption remained about the same as the previous tests at 21 lbs/DT neat (10.5 active).

TR-6

TR – 6 was identical to TR – 5 with the exception of a faster screw speed of 0.5 RPM. The test generated cake solids of 16.5 % at a capacity of 7 dry Kg/Hr.

TR-7

For TR – 7 screw "40T" was removed and screw "X" was reinstalled. The purpose of the screw change out was to observe changes in capacity, capture, and cake dryness. The sludge characteristics also changed slightly from the previous test to a blend of 75% secondary and 25 % primary. The initial screw speed was set at 0.5 RPM. The results were 28.2 % cake solids and a capacity of 13 dry Kg/Hr. Polymer dose for this sludge was approximately 22 lbs. / DT.

TR-8

This test was performed at a faster screw speed from the previous test. The screw speed was set at 0.75 RPM and the polymer dose at 23 lbs/D. Laboratory results indicate that cake solids dropped to 20 % solids.

TR-9 and TR - 10

The purpose of these tests where to demonstrate the potential for Class A biosolids production using an FKC screw press. Lime and indirect steam heating were applied to the sludge at a screw speed of 0.3 rpm. The lime dosage was calculated at 400 lbs/dry ton of quick lime. TR – 9 was a 75S:25P and TR-10 was 100% secondary sludge. The outlet consistency was found to be 33.6 % solids for TR – 9 and 24.7 % fro TR - 10. Temperatures measured from the biosolids discharged were >=85 degrees Celsius. These temperatures along with the measured pH in the sludge of >12.1 show that the screw press is capable of producing Class A biosolids per the Part 503 regulations at this facility.

Conclusions

During the on-site trials, FKC identified some critical factors necessary for optimizing screw press performance:

As expected, the lower screw speeds produced the maximum dryness while the faster screw speeds produced the highest capacities.

For this particular sludge a screw design similar to screw "X" is superior to a screw design similar to screw "40". The screw press was able to achieve cake solids about 2 % higher with screw design "X" than with screw design "40".

Utilizing FKC's class A process as demonstrated in TR – 9 and TR - 10 will not only produce a class A product, but will increase cake solids about 10 %. During this process both lime and indirect steam are added to the sludge.

These results demonstrate that the FKC screw press is capable of producing Class A or dewatered biosolids with the WAS, or blended primary sludges at the Silverton WWTP. Outlet consistencies and capacities will vary depending on the critical factors mentioned above.

Please feel free to review the information provided with this letter and we'll be happy to answer any questions.

Regards,
FKC Co., Ltd.

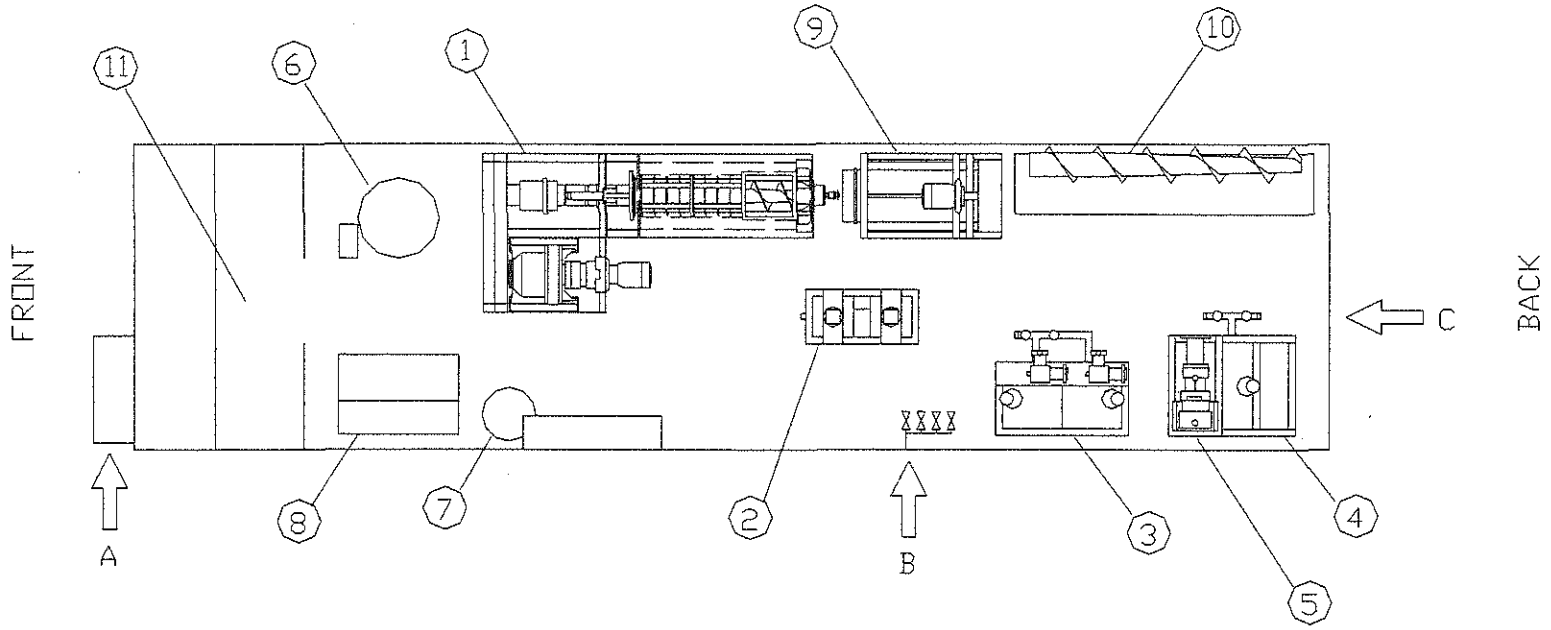
Wesley Bond

SCREW PRESS ON-SITE
TRIAL DATA SHEET

TRIAL DATE:	6/14/05 - 6/16/005					
LOCATION:	Silverton, OR					
PERFORMED BY:	Keith and Wes					
TEST EQUIPMENT:	SHX 200 x 1500L					
SCREW SPECS:	Screw "40T"					
SCREW SPECS:	Screw "X"					
SLUDGE TYPE:	Primary, Secondary Mix					
SLUDGE FIBER CONTENT %	Secondary = 7.6, 50:50 = 23.5, 75:25 = 18.5					
SLUDGE ASH CONTENT %	No Data collected					
POLYMER TYPE	Ciba 7878			0.50%		
POLYMER TYPE						
SLUDGE TANK VOLUME (liter/mm)	0.5525	Liters / mm	440 L	tanks		
POLY TANK VOL (liter/mm)	0.2025	Liters / mm	170 L	tanks		
TRIAL I.D.#	TR - 1	TR - 2	TR - 3	TR - 4	TR - 5	TR - 6
Date	14-Jun-05	14-Jun-05	14-Jun-05	14-Jun-05	14-Jun-05	14-Jun-05
Screw #	40T	40T	40T	40T	40T	40T
Screw RPM	0.75	0.50	0.30	1.10	0.30	0.50
Straight Length (mm)	60	60	60	60	60	60
kW with Load	2.10	2.10	2.10	2.10	2.10	2.10
Steam Pressure (psi)	none	none	none	none	none	none
Lime Addition (Hydrated Lime) CaOH	none	none	none	none	none	none
Lime Addition (Quick Lime) CaO	none	none	none	none	none	none
initial pH after lime addition	--	--	--	--	--	--
pH after Dewatering	--	--	--	--	--	--
Test Duration, minutes	30	15	20	20	25	10
SP Wet Cake Weight (kgs)	25.9	11.8	8.6	25.7	10.6	7.1
Sludge Tank Level @ Start (mm)	200	387	70	610	240	610
Sludge Tank Level @ Finish (mm)	630	510	270	995	410	701
Poly Tank #1 Level @ Start (mm)	300	500	610	725	111	150
Poly Tank #1 Level @ Finish (mm)	365	550	642	805	123	158
Inlet Consist (FKC)	3.40%	3.40%	3.40%	3.40%	2.37%	2.37%
Consistency @ Headbox % (FKC)					6.75%	
SP Outlet Cons.% (FKC) meter #1	25.90%	27.10%	27.10%	21.50%	18.90%	16.5%
SP Outlet Cons.% Average	25.90%	27.10%	27.10%	21.50%	18.90%	16.50%
Sludge Diff. Level Used (mm	430	123	200	385	170	91
Sludge Flow (LPM)	7.92	4.53	5.53	10.64	3.76	5.03
Sludge Flow (GPM)	2.09	1.20	1.46	2.81	0.99	1.33
Sludge Flow (dry lbs/hr)	35.59	20.36	24.83	47.80	11.77	15.75
Polymer #1 Diff. Level Used (mm)	65	50	32	80	12	8
Polymer #1 Flow (LPM)	0.44	0.68	0.32	0.81	0.10	0.16
Polymer #1 Flow (GPM)	0.12	0.18	0.09	0.21	0.03	0.04
Polymer #1 Flow (neat lbs/hr)	0.29	0.45	0.21	0.54	0.06	0.11
Polymer #1 Dosage (neat lb/DT)	16.30	43.82	17.25	22.40	21.83	27.19
Polymer #1 Dosage (neat kg/BDMT)	8.28	22.26	8.76	11.38	11.09	13.81
Outlet Cake kg/hr. Wet	51.80	47.20	25.80	77.10	25.44	42.60
Outlet Cake "Flow" (LPM)	0.86	0.79	0.43	1.29	0.42	0.71
Outlet Cake "Flow" (GPM)	0.23	0.21	0.11	0.34	0.11	0.19
Outlet Cake (dry kg/hr.)	13.42	12.79	6.99	16.58	4.81	7.03
Outlet Cake (dry lbs/hr.)	29.58	28.20	15.42	36.55	10.60	15.50
Mix Ratio	50:50	50:50	50:50	50:50	100% Sec	100% Sec
Volume for Fiber Test (mL)	250				250	
Fiber Weight (grams)	2.00				0.45	
Fiber Content	23.53%				7.59%	

SCREW PRESS ON-SITE
TRIAL DATA SHEET

TRIAL DATE:	6/14/05 - 6/16/005					
LOCATION:	Silverton, OR					
PERFORMED BY:	Keith and Wes					
TEST EQUIPMENT:	SHX 200 x 1500L					
SCREW SPECS:	Screw "40T"					
SCREW SPECS:	Screw "X"					
SLUDGE TYPE:	Primary, Secondary Mix					
SLUDGE FIBER CONTENT %	Secondary = 7.6, 50:50 = 23.5, 75:25 = 18.5					
SLUDGE ASH CONTENT %	No Data collected					
POLYMER TYPE	Ciba 7878			0.50%		
POLYMER TYPE						
SLUDGE TANK VOLUME (liter/mm)	0.5525	Liters / mm	440 L	tanks		
POLY TANK VOL (liter/mm)	0.2025	Liters / mm	170 L	tanks		
TRIAL I.D.#	TR - 7	TR - 8	TR - 9	TR - 10		
Date	15-Jun-05	15-Jun-05	15-Jun-05	16-Jun-05		
Screw #	X	X	X	X		
Screw RPM	0.50	0.75	0.30	0.30		
Straight Length (mm)	90	90	90	90		
kW with Load	2.00	2.00	2.10	2.10		
Steam Pressure (psi)	None	None	40	40		
Lime Addition (Hydrated Lime) CaOH	--	--	400 # / DT	400 # / DT		
Lime Addition (Quick Lime) CaO	--	--	--	--		
initial pH after lime addition	--	--	+ 12	+ 12		
pH after Dewatering	--	--	--	--		
Test Duration. minutes	20	15	60	30		
SP Wet Cake Weight (kgs)	15.8	15.0	22.6	12.0		
Sludge Tank Level @ Start (mm)	205	370	515	630		
Sludge Tank Level @ Finish (mm)	455	520	1005	835		
Poly Tank #1 Level @ Start (mm)	250	310	630	330		
Poly Tank #1 Level @ Finish (mm)	290	335	771	390		
Inlet Consist (FKC)	2.59%	2.59%	2.59%	2.28%		
Consistency @ Headbox % (FKC)						
SP Outlet Cons.% (FKC) meter #1	28.20%	20.00%	33.60%	24.70%		
SP Outlet Cons.% Average	28.20%	20.00%	33.60%	24.70%		
Sludge Diff. Level Used (mm)	250	150	490	205		
Sludge Flow (LPM)	6.91	5.53	4.51	3.78		
Sludge Flow (GPM)	1.82	1.46	1.19	1.00		
Sludge Flow (dry lbs/hr)	23.65	18.92	15.45	11.38		
Polymer #1 Diff. Level Used (mm)	40	25	141	60		
Polymer #1 Flow (LPM)	0.41	0.34	0.48	0.41		
Polymer #1 Flow (GPM)	0.11	0.09	0.13	0.11		
Polymer #1 Flow (neat lbs/hr)	0.27	0.22	0.31	0.27		
Polymer #1 Dosage (neat lb/DT)	22.64	23.59	40.72	47.05		
Polymer #1 Dosage (neat kg/BDMT)	11.50	11.98	20.69	23.90		
Outlet Cake kg/hr. Wet	47.40	60.00	22.60	24.00		
Outlet Cake "Flow" (LPM)	0.79	1.00	0.38	0.40		
Outlet Cake "Flow" (GPM)	0.21	0.26	0.10	0.11		
Outlet Cake (dry kg/hr.)	13.37	12.00	7.59	5.93		
Outlet Cake (dry lbs/hr.)	29.47	26.46	16.74	13.07		
Mix Ratio	75S:25P	75S:25P	75S:25P	100% Sec		
Volume for Fiber Test (mL)	250					
Fiber Weight (grams)	1.20					
Fiber Content	18.53%					



1	SCREW PRESS
2	FLOCCULATION TANKS W/ AGITATORS
3	POLYMER TANKS W/ AGITATORS
4	SLUDGE TANK W/ AGITATOR
5	SLUDGE FEED PUMP
6	BOILER
7	BOILER FUEL TANK
8	CONTROL PANEL
9	ROTARY SCREEN THICKNER
10	SPARE SCREWS SHELVING
11	LAB

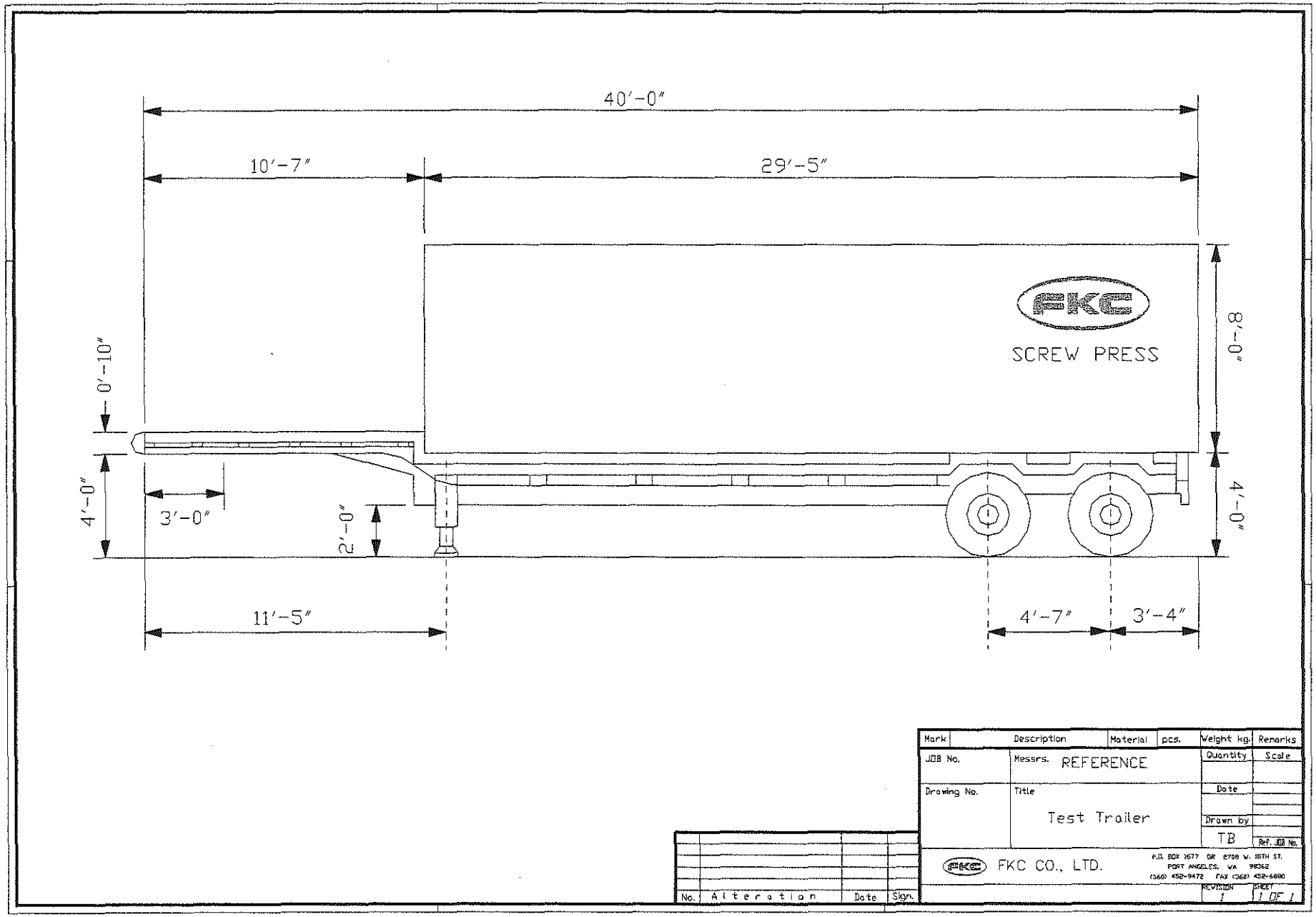
A	ELECTRICAL CONNECTION
	575V or 480V / 3 PH / 15 AMP
B	WATER CONNECTION 3/4" NPT
C	SLUDGE CONNECTION
	2 1/2" FEMALE CAMLOCK

No.	Alteration	Date	Sign.

Mark	Description	Material	pcs.	Weight kg.	Remarks
JOB No.	Messrs. REFERENCE			Quantity	Scale
Drawing No.	Title: Test Trailer General Arrangement			Date	
				Drawn by: TB	
					Ref. JOB No.

FKC CO., LTD.
P.O. BOX 1677 OR 2709 W. 19TH ST.
PORT ANGELES, WA 98362
(360) 452-9472 FAX (360) 452-6880

REVISION 1 SHEET 1 OF 1

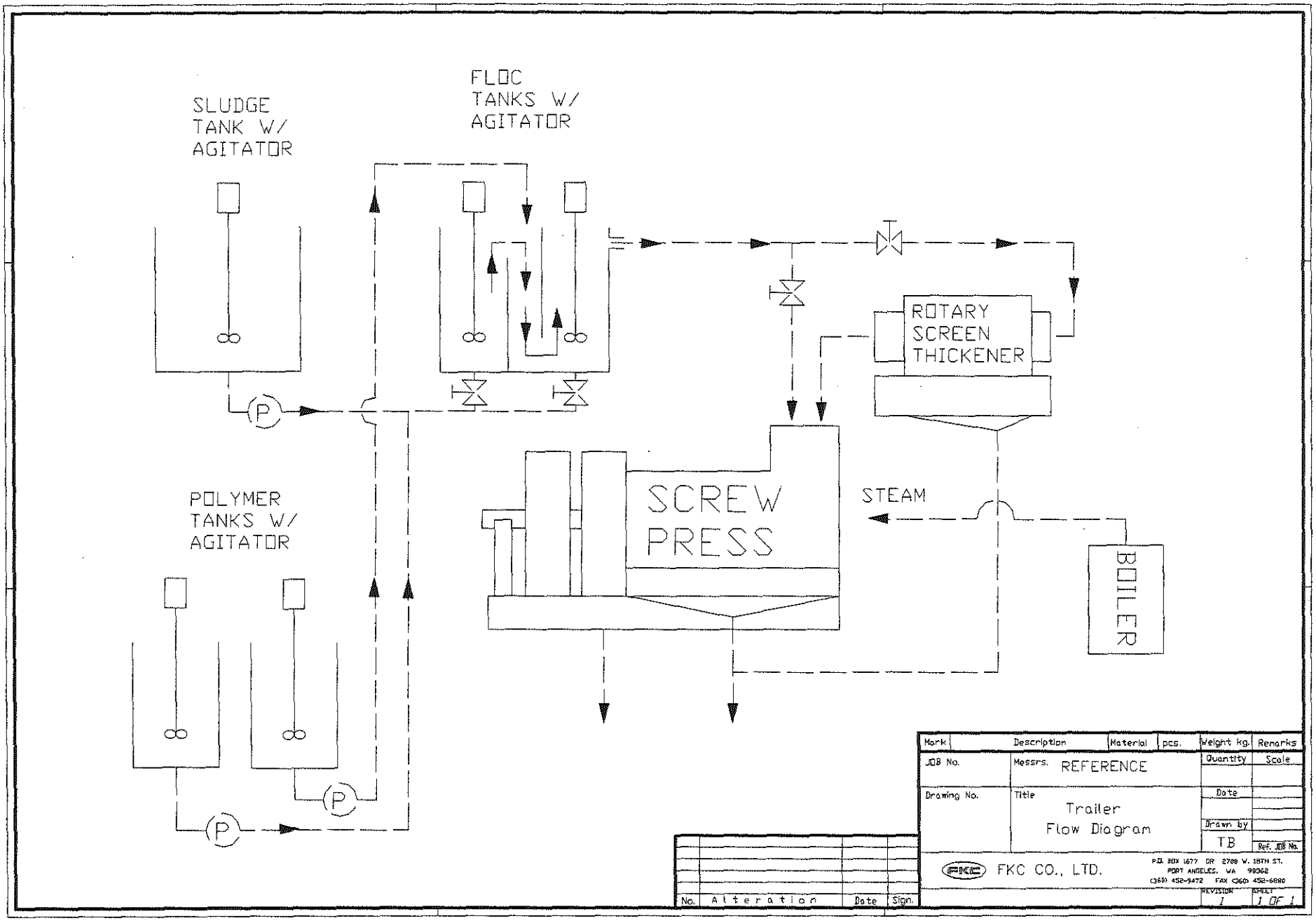


Mark	Description	Material	pcs.	Weight kg.	Remarks
JOB No.	Messrs. REFERENCE			Quantity	Scale
Drawing No.	Title: Test Trailer			Date	
				Drawn by: TB	Ref. JOB No.

FKC CO., LTD.
P.O. BOX 1677 OR 8708 W. 18TH ST.
PORT ANGELES, WA 98362
(360) 452-9472 FAX (360) 452-6880

No.	Alteration	Date	Sign.

REVISION 1 | SHEET 1 OF 1



Mark	Description	Material	pcs.	Weight kg.	Remarks
JOB No.	Messrs. REFERENCE			Quantity	Scale
Drawing No.	Title: Trailer Flow Diagram			Date	
				Drawn by: TB	Ref. JOB No.

FKC CO., LTD.
P.O. BOX 1677 OR 2708 W. 18TH ST.
PORT ANGELES, WA 98362
(360) 452-9472 FAX (360) 452-6880

REVISION 1 SHEET 1 OF 1

No.	Alteration	Date	Sign.

FKC CO., LTD.

2708 West 18th Street
Port Angeles, WA 98363

(360) 452-9472
FAX (360) 452-6880

INVOICE

To: Silverton Wastewater Treatment Plant
400 Schemmel Lane
Silverton, OR 97381

Date: 6-17-05
Inv. #: 004456
REF: P.O. #030-62554

Description	Price
On-Site Testing 6/13-6/16 Keith Lawler & Wes Bond Delivery and set up of test unit	$750.00
Please Pay This Amount	$750.00

Payment terms: Net 30 days

Remit to: 2708 W. 18th St.
Port Angeles, WA 98363

Thank you.
FKC Co., Ltd.

received 6/28/05

030-030-62554

on-site test of dissolved screw press.

FKC CO., LTD.

2708 West 18th Street
Port Angeles, WA 98363

(360) 452-9472
FAX (360) 452-6880

September 14, 2009

Steve Starner
Silverton WWTP
Silverton, OR

Email: SStarner@Silverton.or.us

RE: FKC Pilot Sludge Dewatering Trial Report

Dear Steve:

On behalf of FKC, I thank you for your interest in FKC's dewatering equipment and the opportunity to demonstrate its capabilities at the Silverton Wastewater Treatment Plant. Your assistance in getting the trailer setup and throughout the duration of the trial was much appreciated.

Primary Purposes of the On-Site Dewatering Trial

The three primary purposes of the on-site trial are:

(1) To introduce and demonstrate the applicability of FKC Screw Press technology for your application.

(2) To verify performance and to gather data to assist FKC in the scale up and design of full-scale equipment for possible use in this application.

(3) To provide you an opportunity to observe and assess the potential operational, maintenance, and performance benefits of FKC Screw Press technology in this application.

Overview of the FKC On-Site Trial Unit

General Layout and Process Flow

A simple drawing showing major external dimensions of the trial unit trailer is enclosed for your reference. In addition, a general arrangement drawing of the trial unit equipment and a basic flow diagram of the system also are enclosed for your reference.

Sludge Feed to the Trailer

For this pilot study, the delivered sludge was pumped out of the sludge tank into the holding tank located at the rear of the trailer. Prior to beginning each trial run the precise level of sludge in the tank was measured. At the completion of each trial run the level of sludge remaining in the tank was measured.

The difference between the starting and ending tank levels equaled the volume of sludge pumped to the trial unit screw press during each trial run. This information, together with sludge

consistency, polymer dosage, and percent polymer makedown information was used by FKC to determine polymer consumption on a dry pounds per bone-dry ton of sludge basis.

Sludge Feed Out of the Sludge Holding Tank
Sludge was pumped with a positive displacement pump out of the sludge holding tank and into the flocculation tank located in the middle of the trailer, just in front of the screw press. The sludge flow was controlled with a VFD.

Polymer Feed
Polymer was made down in and pumped out of the polymer tank. The tank was filled with the polymer used as a flocculant. A variable speed diaphragm-type polymer pump was used to pump polymer from the polymer tank into the flocculation tank.

Prior to beginning each trial run the precise level of polymer in the polymer tank was measured and recorded. At the completion of each trial run, the level of the polymer remaining in the tank was measured and recorded. The difference between the starting and ending tank levels equaled the volume of polymer used during each trial run.

Flocculation
The flocculation tank has two separate, individually agitated chambers. Polymer was added to the sludge before the 2nd chamber of the flocculation tank. As the sludge / polymer mixture moved up through the chamber (in a bottom-to-top direction) additional agitation and time were used to complete the flocculation process. The flocculated sludge overflowed the flocculation tank chamber into a flexible hose and flowed through this hose into the headbox of the trial unit screw press.

Screw Press Headbox Level Control
The screw press was run continuously at a constant speed and stable headbox level for 30 minutes prior to, and for the duration of each timed trial run. The screw press headbox level was controlled between the maximum and minimum headbox level set points by automatic on-off operation of the sludge and polymer pumps. A three-electrode headbox level controller automatically switched on the sludge pump, polymer pump, and flocculation tank agitator when the minimum headbox level was reached. When the level of sludge in the headbox reached the maximum level, the sludge pump, polymer pump, and flocculation tank agitator would switch off.

Dewatered Cake Solids
During each timed trial run, all of the dewatered cake solids discharged from the screw press were collected in a white plastic bin placed directly beneath the discharge box of the screw press. The bin was emptied prior to the start of each trial run. At the end of each trial run, the bin containing the dewatered cake solids was weighed on a scale and the weight of the empty bin was subtracted to determine the weight of the cake solids dewatered and discharged from the press during each trial run.

After weighing the bin, samples of dewatered cake solids were collected from random locations throughout the bin. The samples were used for consistency analysis utilizing moisture meters located in the laboratory area. Samples were also given to Silverton for additional testing of cake dryness.

Overview of the On-Site Trial

The fundamental design and operating parameters having the most direct impact on the dewatering performance of FKC Screw Press technology in this application are the screw speed, polymer addition and screw design. The on-site trial consisted of a series of separate timed trial runs. Each of the trial runs had a specific purpose related to identifying and quantifying one or more of the effects of these fundamental design and operating parameters on dewatering performance.

Prior to each trial run the trial unit screw press was set up to run under the specific operating parameters established for the particular trial run (e.g. screw design, screw speed, polymer dose, etc.). Once the operational parameters were established, the trial unit was operated under stable conditions until steady state performance was achieved. After steady state performance was achieved, the unit was temporarily stopped while it was washed down, sludge and polymer tank levels were recorded, and the plastic bin beneath the discharge box of the screw press was emptied.

Each trial run was made by operating the trial unit screw press under the known, stable operating parameters established for the particular run for a period of 10 to 30 minutes. The operating parameters for each trial run were recorded, and at appropriate times prior to, during, or after each trial run operating data and samples were collected.

Successive trial runs were made after a change in one of the design or operational parameters (e.g. a faster or slower screw speed, a different polymer dosage, etc.) to determine the effect of the change made.

Summary of On-Site Trial Runs

A summary of the data collected is contained in the FKC on-site trial data sheets enclosed with this report.

Following is a summary of the objectives of trial runs 1 through 4 performed July 1st, 2009 and observations made during the runs. All trails demonstrated FKC's patented Class A System. This process adds lime (in this case hydrated lime was used) to the sludge in the liquid form to raise the pH over 12 to meet vector attraction reduction requirements, then flocculated with polymer. The limed and flocculated sludge is then dewatered in an FKC screw press with steam injected into the screw to heat the sludge to meet the time and temperature requirements for pathogen reduction. All tests were performed with a single stage, mid compression, Teflon coated screw (screw design "1002"). The chemical conditioning consisted of 52-68 lbs/dry ton (active) of polymer and 500 lbs/dry ton of hydrated Lime. The dry polymer used during the trial was SNF Flopam 8990. The sludge dewatered for all tests was the Silverton WWTP WAS with a 50/50 primary/secondary blend. All outlet consistency percentages listed below are averages of FKC onsite tests and Silverton lab tests.

TRIAL 1

TRIAL 1 was a Class-A test performed at a low screw speed of 0.3 rpm. This test achieved and outlet consistency of 41.50% solids with a capacity of 11.21 dry Kg / hr.

TRIAL 2

TRIAL 2 was made under the same operating conditions as TRIAL 1, but at a mid-range screw speed of 0.5 rpm. This change was to see how faster operating speeds affects the outlet

consistency and capacity of the screw press. Typically, with an increased screw speed, outlet consistency will decrease while capacity increases. On this test, the screw press outlet consistency was 42.40% solids and the capacity increased to 18.83 dry kg/hr.

TRIAL 3

TRIAL 3 was made under the same operating conditions as TRIAL 2, but at a faster screw speed of 0.75 RPM. As expected, outlet consistency decreased to 39.16% solids and the capacity increased to 22.09 dry kg/hr. After running tests at higher speeds it was determined that another test at 0.3 rpm could yield better results than initially seen in TRIAL 1.

TRIAL 4

TRIAL 4 was a Class-A test performed at a low screw speed of 0.3 rpm. Outlet consistency was 46.55% solids and capacity was 11.70 dry Kg / hr. This concluded the testing.

Conclusions

These results demonstrate that the FKC screw press is capable of dewatering 50/50 primary/secondary blend sludge at the Silverton Waste Water Treatment Plants. A full size screw press for the Silverton and Tri-Cities Waste Water Treatment Plants would deliver outlet consistencies of 43% using our Class-A process.

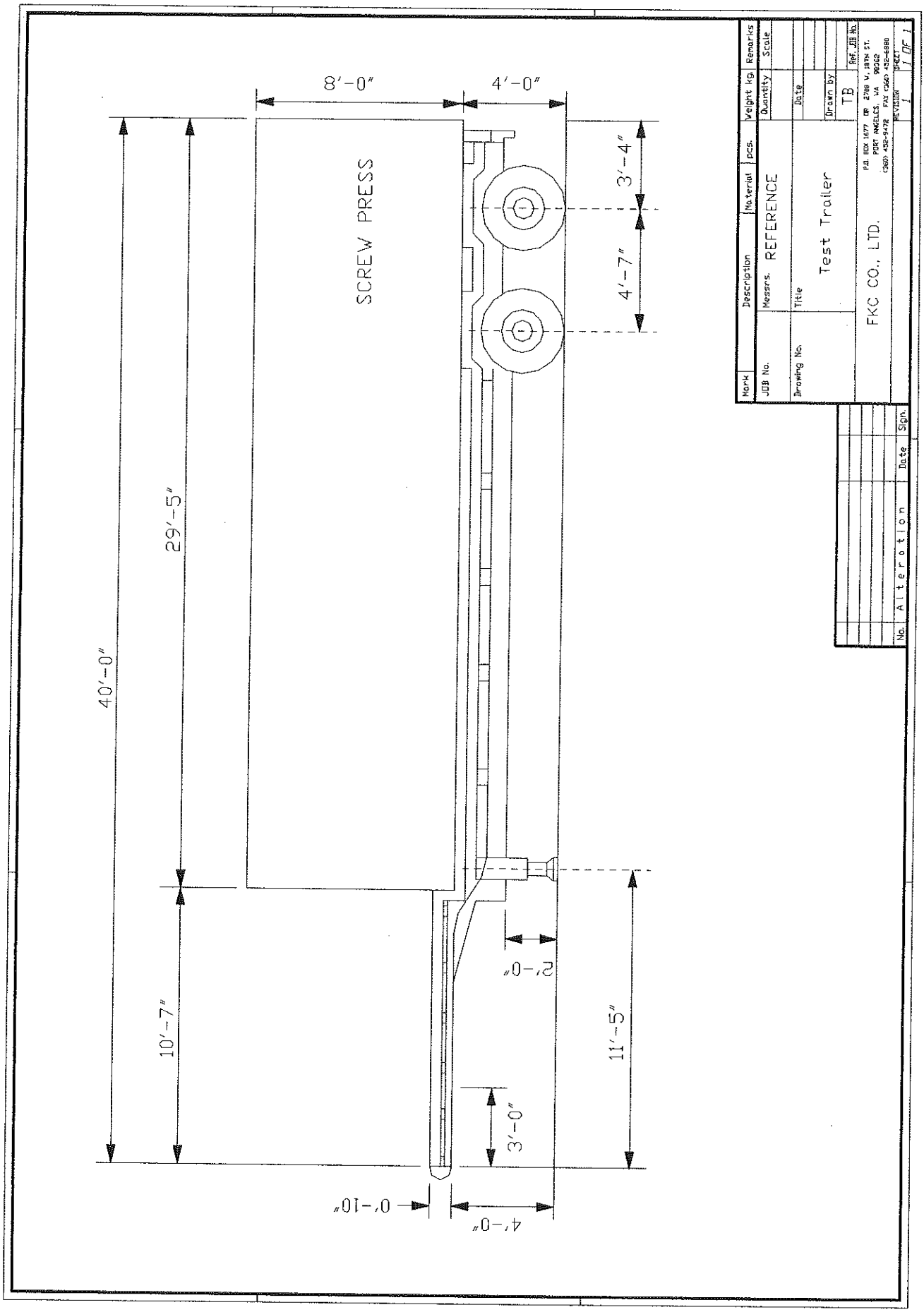
Please review the information provided in this report and feel free to contact Victor Pedroni or myself with any questions that you have.

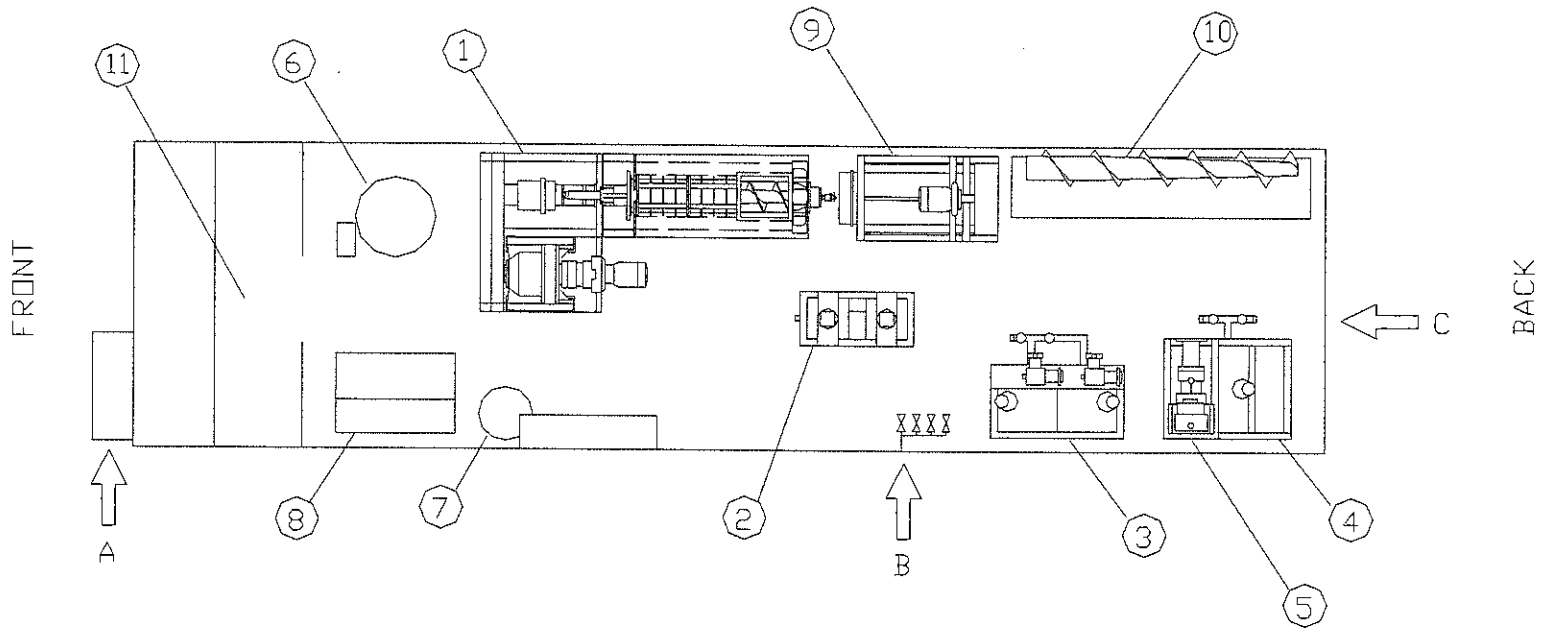
Regards,
FKC Co., Ltd.

Shane Harvey

SCREW PRESS ON-SITE
TRIAL DATA SHEET

TRIAL DATE:	30-Jun-09			
LOCATION:	Kellogg Creek', OR Trial			
PERFORMED BY:	Shane			
SCREW SPECS:	Screw "1002" w/Cone		All poly flow before 1st tank	
SLUDGE TYPE:	50/50 Pri/Sec Mix			
SLUDGE FIBER CONTENT %	22.00%			
SLUDGE ASH CONTENT %				active
POLYMER TYPE	SNF Flopam 8990		0.30%	100%
LIME TYPE	Hydrated			
SLUDGE TANK VOLUME (liter/mm)	0.5525	Liters / mm	440 L	tanks
POLY TANK VOL (liter/mm)	0.2025	Liters / mm	170 L	tanks
TRIAL I.D.#	1	2	3	4
Date	1-Jul-09	1-Jul-09	1-Jul-09	1-Jul-09
Screw RPM	0.30	0.50	0.75	0.30
Straight Length (mm)	135	135	135	135
Seam PSI	35-40	35-40	35-40	35-40
Hydrated Lime Dosage @ 3%	500	500	500	500
kW with Load	2.2	2.2	2.2	2.2
Inlet pH	12.4	12.4	12.4	12.4
Test Duration. minutes	30	15	10	16
SP Wet Cake Weight (kgs)	13.5	11.1	9.4	6.7
Sludge Tank Level @ Start (mm)	240	400	580	750
Sludge Tank Level @ Finish (mm)	640	600	740	980
Poly Tank #1 Level @ Start (mm)	130	710	500	620
Poly Tank #1 Level @ Finish (mm)	470	900	620	800
Inlet Consist (FKC)	2.89%	3.05%	3.16%	3.20%
#1 & #2 Poly pump setting	100/100	100/100	100/100	100/100
Sludge Pump setting(Hz)	6.0	6.0	6.0	6.0
Consistency @ Headbox % (FKC)				
SP Outlet Cons.% (FKC TRAIL LAB)	41.50%	42.40%	39.16%	50.10%
SP Outlet Cons.% (Silverton LAB)				43.00%
SP Outlet Cons.% Average	41.50%	42.40%	39.16%	46.55%
Sludge Diff. Level Used (mm)	400	200	160	230
Sludge Flow (LPM)	7.37	7.37	8.84	7.94
Sludge Flow (GPM)	1.95	1.95	2.34	2.10
Sludge Flow (dry lbs/hr)	28.14	29.70	36.93	33.60
Polymer #1 Diff. Level Used (mm)	340	190	120	180
Polymer #1 Flow (LPM)	2.30	2.57	2.43	2.28
Polymer #1 Flow (GPM)	0.61	0.68	0.64	0.60
Polymer #1 Flow (neat lbs/hr)	0.91	1.02	0.96	0.90
Polymer #1 Dosage (Active lb/DT)	64.68	68.50	52.19	53.78
Polymer #1 Dosage (Active kg/BDMT)	32.86	34.80	26.52	27.32
Outlet Cake kg/hr. Wet	27.00	44.40	56.40	25.13
Outlet Cake "Flow" (LPM)	0.45	0.74	0.94	0.42
Outlet Cake "Flow" (GPM)	0.12	0.20	0.25	0.11
Outlet Cake (dry kg/hr.)	11.21	18.83	22.09	11.70
Outlet Cake (dry lbs/hr.)	24.71	41.51	48.70	25.79


8'-0"
4'-0"
SCREW PRESS
3'-4"
4'-7"
40'-0"
29'-5"
10'-7"
2'-0"
11'-5"
3'-0"
0'-10"
4'-0"
Mark
Description
Material
pcs.
Weight kg.
Remarks
Quantity
Scale
Date
Drawn by
TB
Ref. JOB No.
JOB No.
Messrs. REFERENCE
Title
Test Trailer
Drawing No.
FKC CO., LTD.
P.O. BOX 1677 DR 2708 V. 18TH ST.
PORT ANGELES, WA 98362
(360) 452-9472 FAX (360) 452-6880
REVISION
SHEET
1 OF 1
No.
Alteration
Date
Sign.



1	SCREW PRESS
2	FLOCCULATION TANKS W/ AGITATORS
3	POLYMER TANKS W/ AGITATORS
4	SLUDGE TANK W/ AGITATOR
5	SLUDGE FEED PUMP
6	BOILER
7	BOILER FUEL TANK
8	CONTROL PANEL
9	ROTARY SCREEN THICKNER
10	SPARE SCREWS SHELVING
11	LAB

A	ELECTRICAL CONNECTION
	575V or 480V / 3 PH / 15 AMP
B	WATER CONNECTION 3/4" NPT
C	SLUDGE CONNECTION
	2 1/2" FEMALE CAMLOCK

No.	Alteration	Date	Sign.

Mark	Description	Material	pcs.	Weight kg.	Remarks
JOB No.	Messrs. REFERENCE			Quantity	Scale
Drawing No.	Title: Test Trailer General Arrangement			Date	
				Drawn by: TB	
					Ref. JOB No.

FKC CO., LTD.

P.O. BOX 1677 OR 2708 W. 16TH ST.
PORT ANGELES, WA 98362
(360) 452-9472 FAX (360) 452-6988

REVISION 1 | SHEET 1 OF 1

FOURNIER ROTARY PRESS TESTING
FOR WASTEWATER SLUDGE DEWATERING

SILVERTON WWTP
Silverton, Oregon USA

FOURNIER INDUSTRIES INC.
3787 West Frontenac Blvd.
Thetford Mines (Quebec) Canada G6H 2B5

Phone : (418) 423-4241
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E-mail : general@fournierindustries.com
http://www.rotary-press.com/

/FT

April 29th, 2015

Table of Contents

I. Introduction

The purpose of this report is to present the results of the Fournier Rotary Press pilot trials performed at Silverton WWTP in Oregon, on April 14th to April 16th 2015. The Fournier Rotary Press pilot test is the most effective way to determine and evaluate the performance from a full-sized machine on the present sludge condition. Changing the operational parameters during the course of the trial allows us to determine the peak performance for the following values:

- Maximum Cake Dryness
- Minimal Polymer Consumption
- Maximum Capture Rate
- Maximum Flow Throughput and Production per Channel

The Dewatering trials were performed on: Class B biosolids anaerobic digested, Gravity thickened raw primary sludge, Raw thickened wasted activated sludge by DAF a Mixed from the DAF (50%) and the Thick raw (50%) sludge. Trials runs were performed using emulsion and dry polymer.

The conclusion of this report outlines the design parameters for the future Rotary Press installation.

II. Pilot Equipment and Description

The Fournier Rotary Press pilot unit has two different channels allowing for two trial options a CVP 3” wide channel (used for sludge with a high throughput and easy dewatering), and a CV 2” wide channel (used for a sludge that needs more surface area per unit volume in order to provide drier cake). For this pilot test the 2” channel was selected to test with this type of sludge. The dewatering unit is placed inside a 20 foot container, hauled by truck directly to the site. Sludge from the plant was pumped to the flocculation tank for conditioning.

The following is a list of the components:

- Model 1-900/2000CV Rotary Press
- Model 1-900/2000CVP Rotary Press
- Flocculator Assembly
- Progressive Cavity Feed Pump
- Sludge Holding Tank and Mixer
- Progressive Cavity Polymer Feed Pump
- Two Polymer Preparation Tanks and Mixers
- Cake Conveyor
- Control Panel

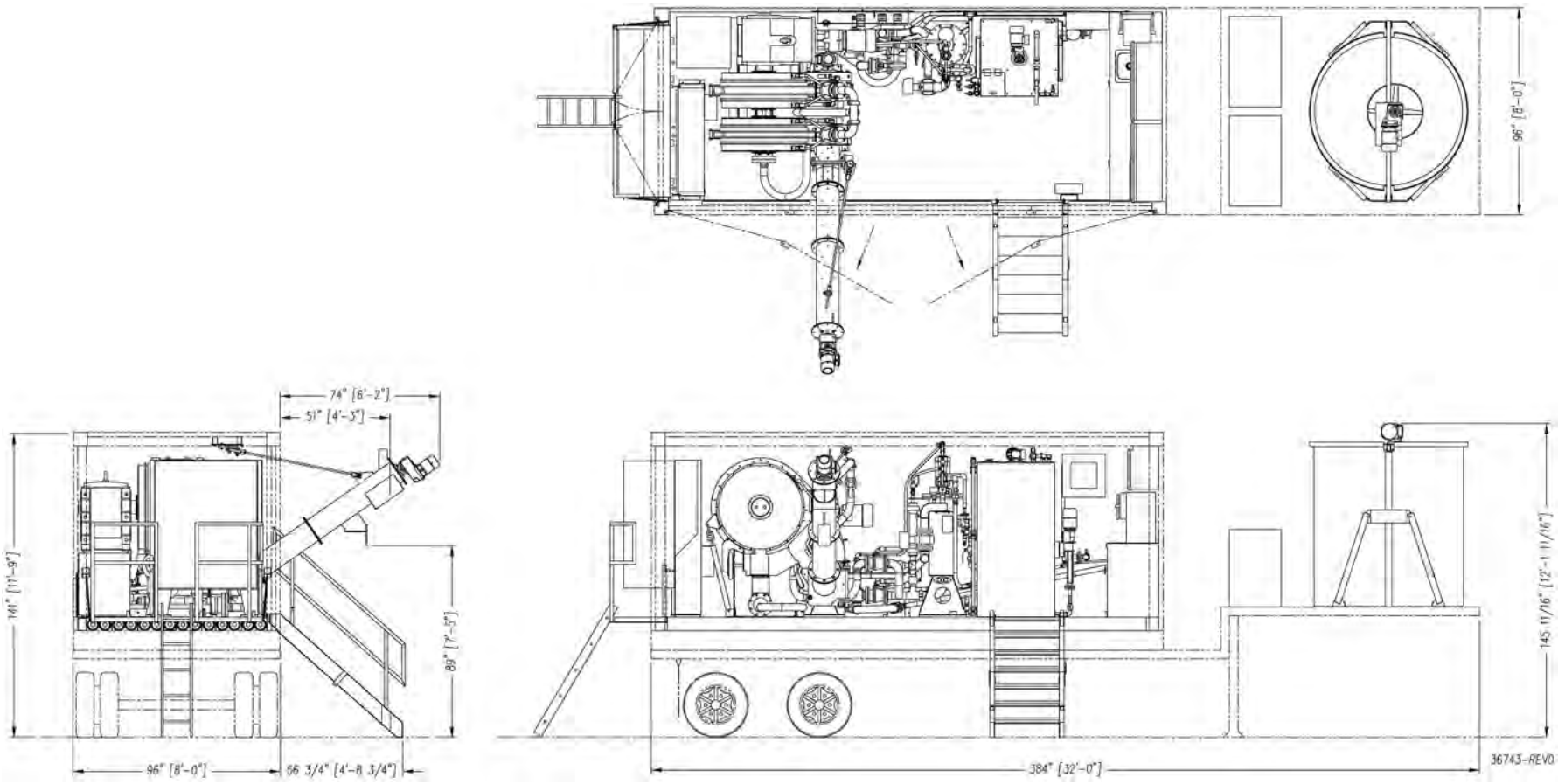
III. Jar Testing and Pre-startup

Among the first steps prior to begin the trials, a jar-test needs to be performed with the objective, to determine the best polymer for this application. Based on the previous lab analyses of a sample, two types of polymer were selected to produce the best and most optimal flocculation of the sludge. The selected polymer were cationic BASF ciba 7878fs40 (emulsion) and BASF ciba 7587 (powder).

A check list of the following components was performed before the start-up to ensure correct operation:

- Polymer Pump
- Polymer Flow Meter
- Sludge Pump
- Sludge Flow Meter
- Inlet Pressure Gauge
- Flocculator Tank and Mixer
- Pneumatic Recirculation Valve
- Pneumatic Dewatering Valve
- Rotary Press Channels and Motor

Figure 1: Mobile Unit General Arrangement



IV. Pilot Testing

The goal of the pilot testing is to achieve and demonstrate in a full scale manner the optimal performance potential of the Fournier Rotary Press using the current customer's sludge. Operating parameters were adjusted in order to present and monitor the following results:

- Cake Production
- Cake Dryness
- Capture Rate
- Energy Consumption
- Polymer Consumption (active lbs.)
- Sludge Flow Rate

Pilot testing schedule is represented in the following table.

Date	Test Runs	Polymer	Sludge
Monday, April 13th	Set up begins		
Tuesday, April 14th	Run # 1a – 1m,	BASF 7878fs40	Anaerobic digested
Wednesday, April 15th	Run # 2a – 2j, Run # 3a – 3j,	BASF 7587 BASF 7587	Anaerobic digested Gravity thick raw primary
Thursday, April 16th	Run # 4a – 4j, Run # 5a – 5j,	BASF 7587 BASF 7587	Mix Gravity Thick raw + Raw thick DAF. Raw Thickened DAF
Friday, April 30th	Trailer clean up Trailer pick up		

V. Results and Discussion

The results of the piloting trial unit on different sludge from the Silverton WWTP are presented in table 1A to 1E. The table illustrates the operating parameters such as:

- Polymer Type, Concentration and Dosage
- Flocculator Speed
- Rotary Press Speed
- Rotary Press Inlet Pressure and Outlet Pressure
- Sludge Flow and Total Solids

It is followed by the results of the testing:

- Filtrate Total Suspended Solids
- Cake Total Solids
- Production Rate per Channel
- Capture Rate

Two type of cationic polymer were selected, Emulsion BASF: ciba 7878fs40 and Powder BASF: ciba7587 formed excellent flocculation. The polymer solution concentration has been diluted down to 0.20 % active. The polymer solution is then pumped to the flocculation tank inlet, and mixed with the sludge before being fed to the Rotary Press to ensure optimal mixing. The polymer dosage of the powder from BASF ciba 7587 adequately flocculate the sludge was on average of 15.3 active lbs per dry ton of solid.

The pilot trial produced great cake dryness, production, and the total suspended solids measured in the filtrate demonstrated an excellent capture rate.

Table 1-A: Pilot Results Process Sludge **Day 1 April 14th 2015**

FOURNIER INDUSTRIES INC.

ENVIRONMENTAL DIVISION

Location: Silverton WWTP

ROTARY PRESS 900-1000CV Sludge pH: 7,0

(Channel OPTIMUM) Cloth test: 12.19% *Technicians :F. Turcotte*

Sludge Type: Class B anaerobic digested Duration of project : 14th -16th April 2015

GENERAL		OPERATING PARAMETERS											RESULTS				
		POLYMER			PRESS								SLUDGE	FILTRATE	CAKE	PRODUCTION	CAPT.
DATE	RUN #	TYPE	CONC. Active (%)	CONSUMPTION Active (lbs/dry t)	FLOCCULATOR RPM	PRESS RPM	Kw (Press)	ENERGY USAGE Kw-hr/ 2000 dry lbs	PRESSURE INLET (Psi)	PRESSURE OUTLET (Psi)	SLUDGE FLOW (USGPM)	TS (%)	TSS (%)	TS (%)	Per channel (dry lbs/hr)	RATE TSS (%)
April, 14, 2015	1a	BASF 7878fs40	0,20%	75,3	235	0,40	0,57	6,0	4,5	45	14,9	1,5	0,01	13,3%	112	99,3%
April, 14, 2015	1b	BASF 7878fs40	0,20%	71,4	235	0,40	0,60	6,4	4,8	45	14,7	1,5	0,03	13,4%	111	98,1%
April, 14, 2015	1c	BASF 7878fs40	0,20%	69,5	255	0,50	0,68	6,3	4,2	45	16,9	1,5	0,04	12,7%	125	97,4%
April, 14, 2015	1d	BASF 7878fs40	0,20%	72,4	255	0,50	0,68	6,4	4,4	45	16,2	1,5	0,02	12,4%	121	98,7%
April, 14, 2015	1e	BASF 7878fs40	0,20%	73,3	255	0,30	0,46	5,7	4,4	45	12,6	1,5	0,04	13,9%	92	97,3%
April, 14, 2015	1f	BASF 7878fs40	0,20%	73,3	255	0,30	0,45	5,4	5,0	45	12,5	1,5	0,02	14,0%	92	98,7%
April, 14, 2015	1g	BASF 7878fs40	0,20%	70,4	250	0,25	0,42	6,6	5,0	50	10,5	1,5	0,07	14,9%	75	95,3%
April, 14, 2015	1h	BASF 7878fs40	0,20%	70,9	250	0,25	0,43	6,4	5,0	50	10,7	1,5	0,02	15,1%	79	98,7%
April, 14, 2015	1i	BASF 7878fs40	0,20%	70,9	250	0,60	0,81	7,2	5,0	45	17,6	1,5	0,04	11,7%	127	97,3%
April, 14, 2015	1j	BASF 7878fs40	0,20%	71,8	250	0,60	0,81	7,2	5,0	45	17,6	1,5	0,06	11,7%	124	95,9%
April, 14, 2015	1k	BASF 7878fs40	0,20%	71,4	250	0,75	0,97	7,8	5,5	45	18,4	1,5	0,04	10,8%	132	97,3%
April, 14, 2015	1l	BASF 7878fs40	0,20%	71,8	250	0,75	0,97	8,1	5,5	45	18,3	1,5	0,08	10,2%	127	94,6%
April, 14, 2015	1m	BASF 7878fs40	0,20%	71,8	250	0,75	0,97	8,1	5,5	45	18,0	1,5	0,08	11,5%	125	94,6%
AVERAGE			*0,20%*	*71,9*	*249*	*0,49*	*0,68*	*6,8*	*4,9*	*46*	*15,3*	*1,5*	*0,04*	*12,7%*	*111*	*97,2%*

Table 1-B: Pilot Results Process Sludge **Day 2 April 15th 2015**

FOURNIER INDUSTRIES INC.

ENVIRONMENTAL DIVISION

Location: Silverton WWTP

ROTARY PRESS 900-1000CV Sludge pH: 7,0

(Channel OPTIMUM) Cloth test: 11,85% *Technicians :F. Turcotte*

Sludge Type: Class B anaerobic digested Duration of project : 14th -16th April 2015

GENERAL		OPERATING PARAMETERS										RESULTS				
		POLYMER			PRESS							SLUDGE	FILTRATE	CAKE	PRODUCTION	CAPT.
DATE	RUN #	TYPE	CONC. Active (%)	CONSUMPTION Active (lbs/dry t)	FLOCCULATOR RPM	PRESS RPM	Kw (Press)	ENERGY USAGE Kw-hr/ 2000 dry lbs	PRESSURE INLET (Psi)	PRESSURE OUTLET (Psi)	SLUDGE FLOW (USGPM)	TS (%)	TSS (%)	TS (%)	Per channel (dry lbs/hr)	RATE TSS (%)
April, 15, 2015	2a	BASF 7587	0,20%	41,1	235	0,40	0,39	4,5	4,0	45	13,7	1,5	0,05	12,0%	99	96,7%
April, 15, 2015	2b	BASF 7587	0,20%	41,1	235	0,40	0,38	4,5	4,0	50	13,5	1,5	0,03	11,9%	99	98,0%
April, 15, 2015	2c	BASF 7587	0,20%	41,1	200	0,50	0,37	3,9	4,4	50	15,2	1,5	0,04	10,8%	111	97,3%
April, 15, 2015	2d	BASF 7587	0,20%	41,1	200	0,50	0,37	3,7	4,4	50	15,7	1,5	0,03	11,0%	115	98,0%
April, 15, 2015	2e	BASF 7587	0,20%	41,1	200	0,60	0,42	3,7	4,4	50	17,6	1,5	0,06	11,0%	126	96,0%
April, 15, 2015	2f	BASF 7587	0,20%	41,1	200	0,60	0,42	3,8	4,4	50	17,4	1,5	0,04	10,7%	127	97,3%
April, 15, 2015	2g	BASF 7587	0,20%	41,1	200	0,70	0,41	3,2	4,4	50	19,2	1,5	0,07	10,1%	137	95,3%
April, 15, 2015	2h	BASF 7587	0,20%	41,1	200	0,70	0,42	3,4	4,4	50	19,4	1,5	0,08	10,2%	137	94,7%
April, 15, 2015	2i	BASF 7587	0,20%	41,1	200	0,30	0,41	6,1	4,4	50	10,1	1,5	0,03	12,7%	74	98,0%
April, 15, 2015	2j	BASF 7587	0,20%	41,1	200	0,30	0,41	6,2	4,4	50	10,3	1,5	0,04	12,7%	75	97,3%
AVERAGE			*0,20%*	*41,1*	*207*	*0,50*	*0,40*	*4,3*	*4,3*	*50*	*15,2*	*1,5*	*0,05*	*11,3%*	*110*	*96,9%*

Table 1-C: Pilot Results Process Sludge **Day 2 April 15th 2015**

FOURNIER INDUSTRIES INC.

ENVIRONMENTAL DIVISION

Location: Silverton WWTP

ROTARY PRESS 900-1000CV Sludge pH: 6,0

(Channel OPTIMUM) Cloth test: 28,05% *Technicians :F. Turcotte*

Sludge Type: Gravity thickened raw primary Duration of project : 14th -16th April 2015

GENERAL		OPERATING PARAMETERS										RESULTS				
		POLYMER			PRESS							SLUDGE	FILTRATE	CAKE	PRODUCTION	CAPT.
DATE	RUN #	TYPE	CONC. Active (%)	CONSUMPTION Active (lbs/dry t)	FLOCCULATOR RPM	PRESS RPM	Kw (Press)	ENERGY USAGE Kw-hr/ 2000 dry lbs	PRESSURE INLET (Psi)	PRESSURE OUTLET (Psi)	SLUDGE FLOW (USGPM)	TS (%)	TSS (%)	TS (%)	Per channel (dry lbs/hr)	RATE TSS (%)
April, 15, 2015	3a	BASF 7587	0,20%	5,8	120	0,45	0,73	3,4	5,5	65	10,3	5,4	0,06	33,8%	273	98,9%
April, 15, 2015	3b	BASF 7587	0,20%	5,8	120	0,45	0,72	3,4	6,0	65	10,3	5,3	0,03	33,5%	270	99,4%
April, 15, 2015	3c	BASF 7587	0,20%	5,8	120	0,60	0,96	4,0	6,0	75	11,8	5,3	0,05	32,9%	311	99,1%
April, 15, 2015	3d	BASF 7587	0,20%	6,6	120	0,60	0,96	4,1	6,0	75	11,6	5,3	0,08	33,2%	304	98,5%
April, 15, 2015	3e	BASF 7587	0,20%	5,0	120	0,75	1,25	4,9	6,0	75	13,2	5,3	0,14	33,8%	341	97,4%
April, 15, 2015	3f	BASF 7587	0,20%	4,2	120	0,75	1,25	5,0	6,0	75	13,0	5,3	0,10	33,0%	338	98,1%
April, 15, 2015	3g	BASF 7587	0,20%	4,2	120	0,90	1,41	5,2	6,2	75	14,5	5,3	0,17	31,8%	371	96,8%
April, 15, 2015	3h	BASF 7587	0,20%	4,1	120	0,90	1,42	5,2	6,2	75	14,6	5,3	0,19	32,4%	373	96,4%
April, 15, 2015	3i	BASF 7587	0,20%	4,1	100	1,05	1,66	6,0	5,8	60	14,8	5,3	0,18	32,0%	379	96,6%
April, 15, 2015	3j	BASF 7587	0,20%	4,1	100	1,05	1,66	6,0	5,8	60	14,7	5,3	0,18	31,1%	377	96,6%
AVERAGE			*0,20%*	*5,0*	*116*	*0,75*	*1,20*	*4,7*	*6,0*	*70*	*12,9*	*5,3*	*0,12*	*32,7%*	*334*	*97,8%*

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Table 1-D: Pilot Results Process Sludge **Day 3 April 16th 2015**

FOURNIER INDUSTRIES INC.

ENVIRONMENTAL DIVISION

Location: Silverton WWTP

ROTARY PRESS 900-1000CV Sludge pH: 6,2

(Channel OPTIMUM) Cloth test: 21,65% *Technicians :F. Turcotte*

Sludge Type: Gravity thick raw + thick raw (DAF) Duration of project : 14th -16th April 2015

GENERAL		OPERATING PARAMETERS										RESULTS				
		POLYMER			PRESS							SLUDGE	FILTRATE	CAKE	PRODUCTION	CAPT.
DATE	RUN #	TYPE	CONC. Active (%)	CONSUMPTION Active (lbs/dry t)	FLOCCULATOR RPM	PRESS RPM	Kw (Press)	ENERGY USAGE Kw-hr/ 2000 dry lbs	PRESSURE INLET (Psi)	PRESSURE OUTLET (Psi)	SLUDGE FLOW (USGPM)	TS (%)	TSS (%)	TS (%)	Per channel (dry lbs/hr)	RATE TSS (%)
April, 16, 2015	4a	BASF 7587	0,20%	6,3	90	0,55	0,92	6,2	4,5	60	11,4	3,5	0,05	25,2%	195	98,6%
April, 16, 2015	4b	BASF 7587	0,20%	5,7	90	0,55	0,92	6,5	5,0	70	11,0	3,5	0,09	25,3%	187	97,4%
April, 16, 2015	4c	BASF 7587	0,20%	5,7	90	0,70	1,10	6,6	6,0	75	12,8	3,5	0,10	23,8%	216	97,1%
April, 16, 2015	4d	BASF 7587	0,20%	5,7	90	0,70	1,10	6,5	5,8	75	12,9	3,5	0,09	22,6%	219	97,4%
April, 16, 2015	4e	BASF 7587	0,20%	5,7	90	0,85	1,26	6,8	5,8	70	13,9	3,5	0,10	24,5%	234	97,1%
April, 16, 2015	4f	BASF 7587	0,20%	5,7	90	0,85	1,26	6,8	5,8	70	14,0	3,5	0,10	25,2%	237	97,1%
April, 16, 2015	4g	BASF 7587	0,20%	5,7	90	0,95	1,35	7,0	5,8	70	14,5	3,5	0,16	25,3%	242	95,4%
April, 16, 2015	4h	BASF 7587	0,20%	5,7	90	0,95	1,36	6,9	5,8	70	14,6	3,5	0,17	24,8%	243	95,1%
April, 16, 2015	4i	BASF 7587	0,20%	5,7	90	0,45	0,72	5,6	5,8	70	10,5	3,5	0,17	26,9%	174	95,1%
April, 16, 2015	4j	BASF 7587	0,20%	5,7	90	0,45	0,72	5,4	5,8	70	10,5	3,5	0,05	27,0%	181	98,6%
AVERAGE			*0,20%*	*5,7*	*90*	*0,70*	*1,07*	*6,4*	*5,6*	*70*	*12,6*	*3,5*	*0,11*	*25,1%*	*213*	*96,9%*

Table 1-E: Pilot Results Process Sludge **Day 3 April 16th 2015**

FOURNIER INDUSTRIES INC.

ENVIRONMENTAL DIVISION

Location: Silverton WWTP

ROTARY PRESS 900-1000CV

(Channel OPTIMUM)

Sludge Type: Raw thickened dissolved air flotation

Sludge pH: 7,0

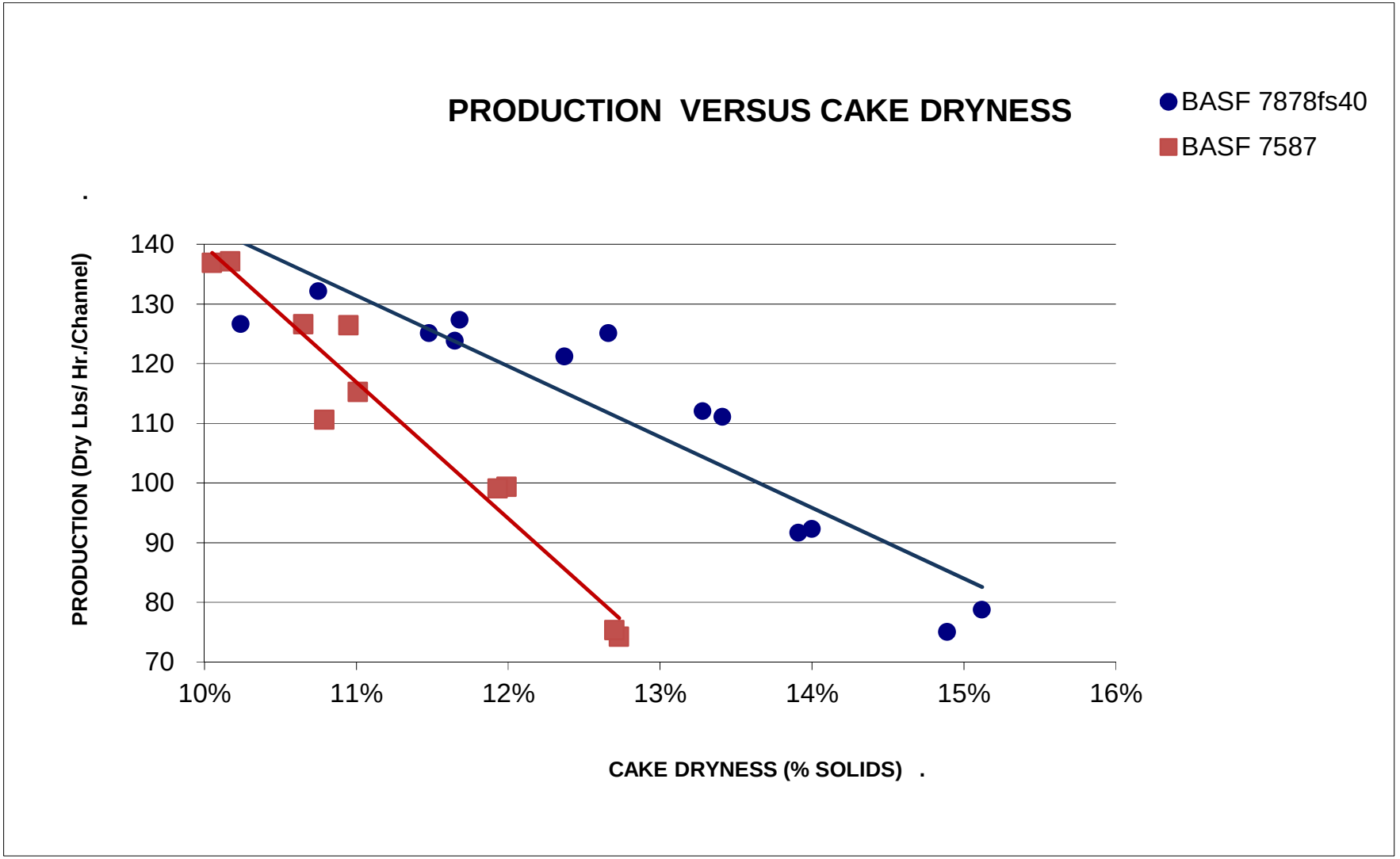
Cloth test: 10.94%

Technicians :F. Turcotte

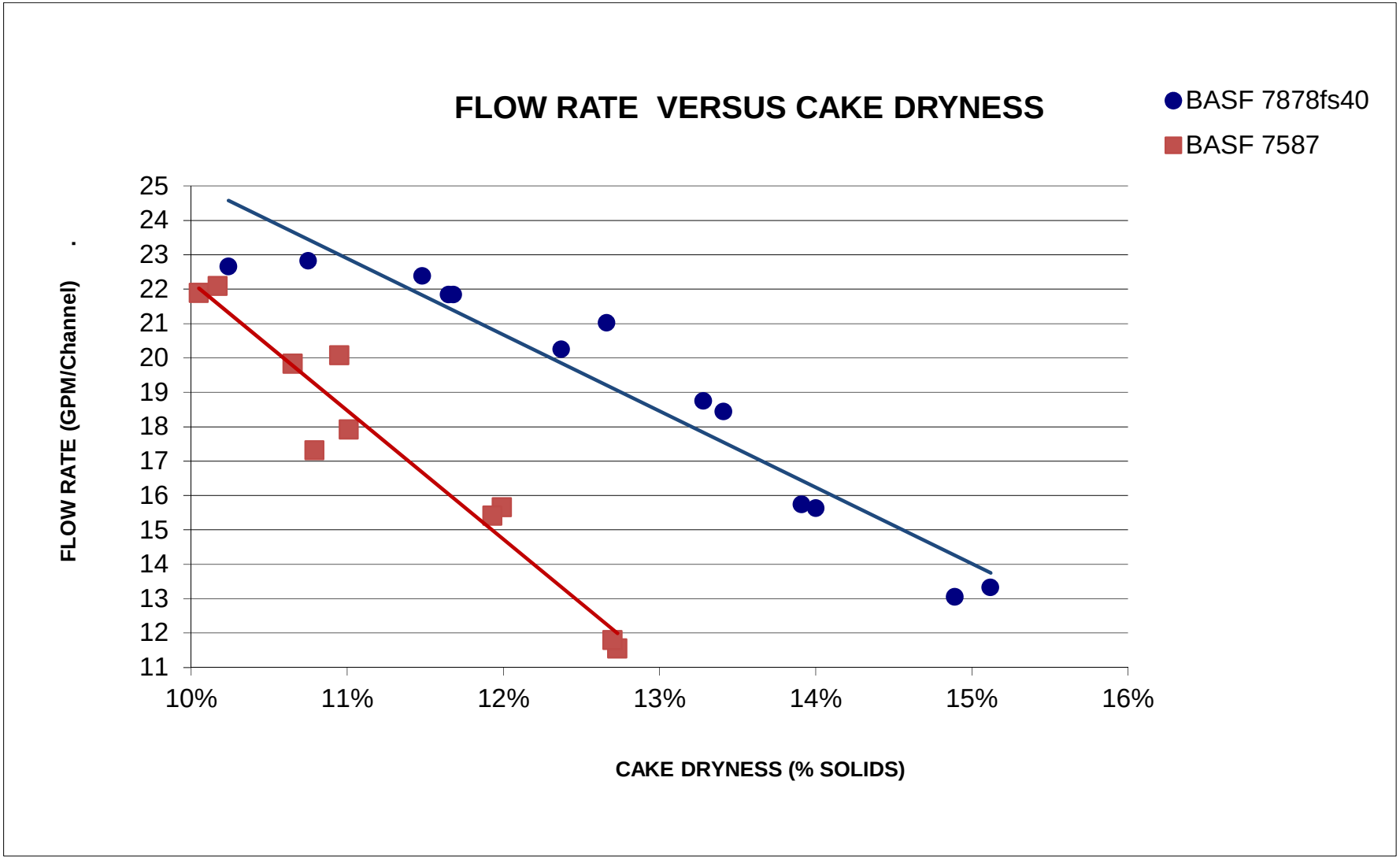
Duration of project : 14th -16th April 2015

GENERAL		OPERATING PARAMETERS												RESULTS				
		POLYMER			PRESS								SLUDGE	FILTRATE	CAKE	PRODUCTION	CAPT.
DATE	RUN #	TYPE	CONC. Active (%)	CONSUMPTION Active (lbs/dry t)	FLOCCULATOR RPM	PRESS RPM	Kw (Press)	ENERGY USAGE Kw-hr/ 2000 dry lbs	PRESSURE INLET (Psi)	PRESSURE INTLET (Kpa)	PRESSURE OUTLET (Psi)	SLUDGE FLOW (USGPM)	TS (%)	TSS (%)	TS (%)	Per channel (dry lbs/hr)	RATE TSS (%)
April, 16, 2015	5a	BASF 7587	0,20%	8,2	130	0,40	0,53	5,7	4,5	31	52	9,0	2,7	0,06	12,0%	118	97,8%
April, 16, 2015	5b	BASF 7587	0,20%	9,6	165	0,40	0,55	5,8	4,5	31	52	9,0	2,8	0,10	12,2%	119	96,4%
April, 16, 2015	5c	BASF 7587	0,20%	9,7	165	0,50	0,65	5,9	4,5	31	52	10,3	2,7	0,03	11,8%	139	98,9%
April, 16, 2015	5d	BASF 7587	0,20%	9,7	165	0,50	0,65	6,0	4,5	31	52	10,2	2,7	0,04	11,4%	136	98,5%
April, 16, 2015	5e	BASF 7587	0,20%	9,7	165	0,60	0,77	6,7	4,5	31	50	11,1	2,7	0,14	11,3%	143	94,9%
April, 16, 2015	5f	BASF 7587	0,20%	9,8	165	0,60	0,77	6,7	4,5	31	50	11,2	2,7	0,13	11,8%	143	95,2%
April, 16, 2015	5g	BASF 7587	0,20%	9,8	165	0,70	0,88	7,0	4,5	31	50	12,3	2,7	0,14	11,5%	157	94,8%
April, 16, 2015	5h	BASF 7587	0,20%	9,7	165	0,70	0,89	7,1	4,5	31	50	12,4	2,7	0,14	10,9%	159	94,8%
April, 16, 2015	5i	BASF 7587	0,20%	9,7	165	0,30	0,42	5,5	4,5	31	50	7,2	2,7	0,04	13,5%	96	98,5%
April, 16, 2015	5j	BASF 7587	0,20%	9,7	165	0,30	0,42	5,7	4,5	31	50	7,1	2,7	0,05	13,5%	95	98,2%
AVERAGE			*0,20%*	*9,6*	*162*	*0,50*	*0,65*	*6,2*	*4,5*	*31*	*51*	*10,0*	*2,7*	*0,09*	*12,0%*	*130*	*96,8%*

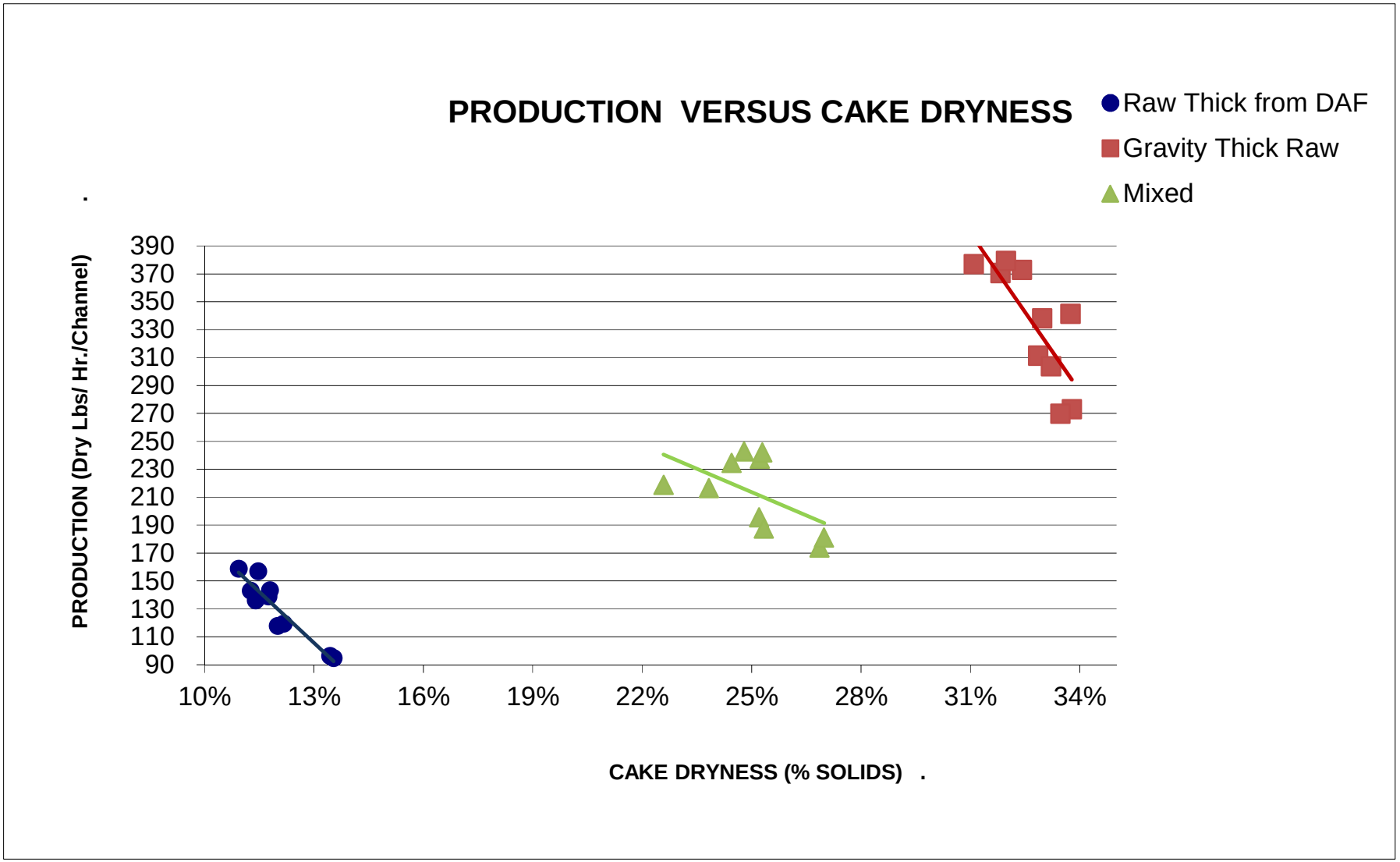
Anaerobic digested
Graph 1: Production versus Cake Dryness



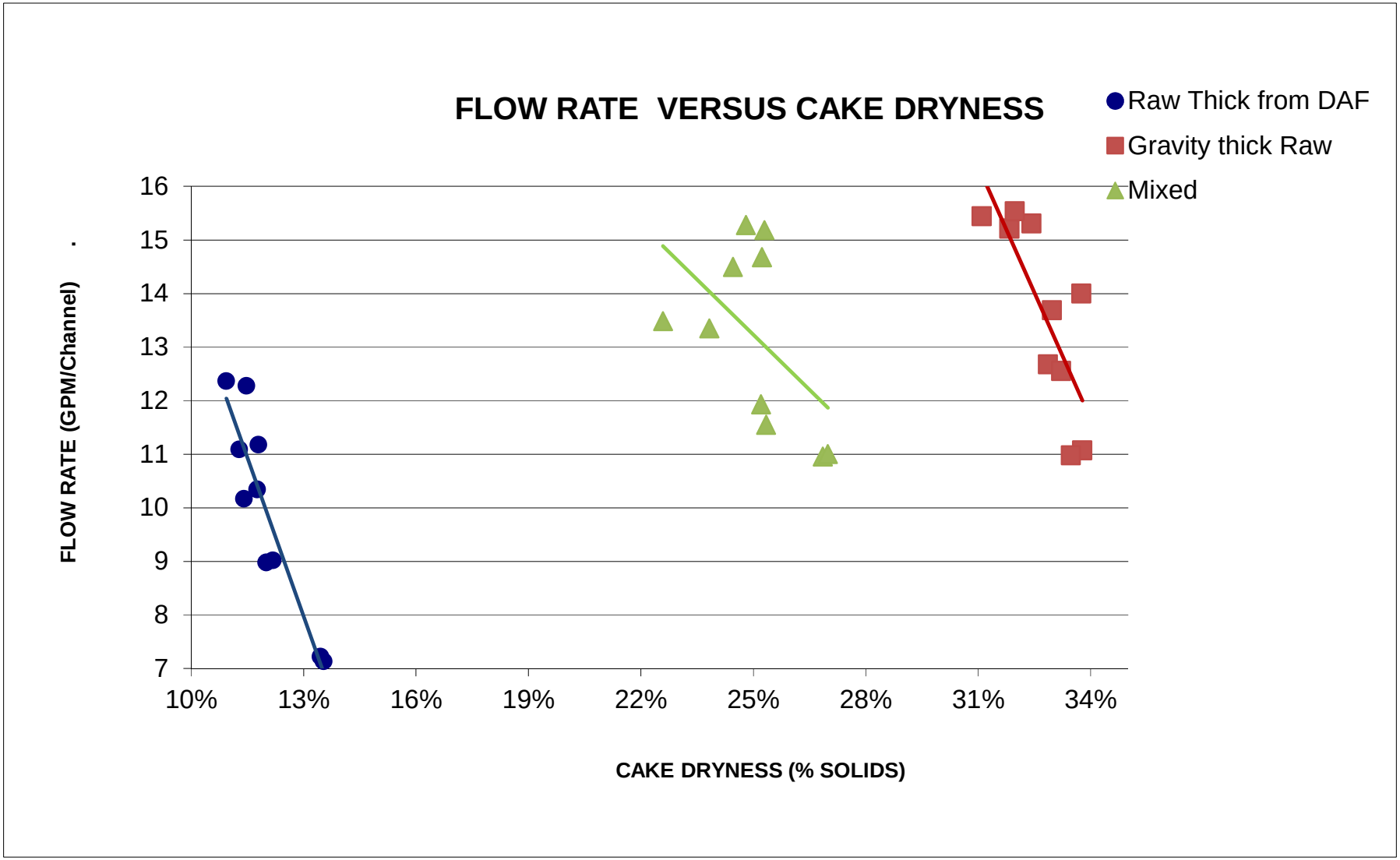
Anaerobic digested
Graph 2: Flow Rate versus Cake Dryness



Graph 3: Production versus Cake Dryness



Graph 4: Flow Rate versus Cake Dryness



VI. Conclusion

The pilot test has proven the capacity of the Fournier Rotary Press technology to efficiently dewater the different sludge from the Silverton WWTP.

	Production	**Flow rate**	**Dryness**	**Capture Rate**
Anaerobic (dry polymer)	Low: 74 High: 137	10.1 gpm 19.4 gpm	11.7% 10.1%	96.9%
Anaerobic (Emulsion)	Low: 75 High: 132	10.7 gpm 18.2 gpm	15.1% 10.8%	97.2%
Raw Thickened (DAF)	Low: 95 High: 139	7.1 gpm 12.4 gpm	13.5% 10.9%	96.8%
Raw Gravity thickened	Low: 273 High: 377	10.3 gpm 14.7 gpm	33.8% 31.1%	97.8%
Mixed: thick Raw (DAF) + thick gravity	Low: 174 High: 242	10.5 gpm 14.6 gpm	27% 25.3%	96.9%

Those results were achieved while the capture rate was averaging 97.1 %.

The Rotary Press is the most advanced dewatering technology. The start-up and shutdown procedures consist of a simple push-button operation; It is designed for unmanned operation, and presents a consistent reliable operation under automatic mode making it ideal for this application.

The pilot trials performed have demonstrated its reliability and consistency to produce a good cake dryness using very little power and is designed to operate

with minimal operator assistance. The equipment is capable of shutting down and washing itself without operator assistance. The device can be commanded to shut itself down at a specific time or based on low sludge level sensing. The Rotary Press is an expandable technology, allowing other channels, to be added to the unit, in order to accommodate future increases in the flow. Up to six (6) channels can be mounted on the same Press.

Fournier Industries Inc. would like to thank and express its gratitude to all the members involved at Silverton plant staff for helping make the pilot trials possible and for expressing their interests in the Fournier Rotary Press.

SCREW PRESS PILOT DEMONSTRATION
SILVERTON, OREGON
WASTEWATER TREATMENT PLANT

June 29 to July 1, 2015

Robert Domenico

BDP Industries

Tim Owens

Correct Equipment

Contents

1. EXECUTIVE SUMMARY

The City of Silverton Wastewater Treatment is a waste activated system followed by anaerobic digestion. The digester feed is by volume 2/3 waste activated sludge 1/3 Primary Clarifier underflow. From the digester the sludge is sent decant tanks where the slurry is thickened then hauled away. The engineering firm of Keller and Associates is studing alternatives to improve the system. As part of the study, a onsite pilot demonstration was conducted to examine screw press technology. BDP Industries operated at the facility from June 20th to July 1th, 2015 to test and document the performance parameters of the Model DSP Screw Press.

A trailer mounted DSP Screw Press was temporarily plumbed in onsite. The DSP offers the latest in dewatering technology: tapered screw shaft, slotted screen, automatic pneumatic discharge cone that maximize capacity and cake solids, filtrate recycle system to optimize solids capture and an easily removable basket screens and replaceable flights to minimize maintenance costs. These features are based on over thirty-five years of experience and ongoing improvements.

The following parameters were deemed to be of interest in the pilot study:

1. Cake Dryness
2. Polymer Dosage
3. Hydraulic/Dry Solids Loading

Performance for the DSP while operating on the anaerobically digested solids:

Operating Parameter	3012 DSP	Expected Benefits of DSP
Hydraulic Loading, gpm	12 – 40	Independent rotary drum provides higher hydraulic throughput
Solids Loading, dry lb/hr	85 – 206	Independent rotary drum provides higher solids throughput
Discharge Concentration, wt %	12 – 20.4%	Variable inlet pressure, tapered shaft, and variable pneumatic cone pressure achieves higher solids
Polymer Dosage, lb/ton	32 – 50	Improved conditioning and dewatering technology optimize polymer use and discharge solids
Average Capture Rate, %	98.4%	Improved capture with filtrate recycle reduces solids recycle to plant

In summary, the pilot test demonstrated the capabilities and operability of the Model DSP Screw Press. The DSP can produce high discharge cake solids, consistently over 17% and high solids capture, 98% average with a design that is simple to operate and maintain. The rugged construction, coupled with a modern and improved press design, represents a state-of-the-art mechanical dewatering method for the City of Silverton.

2. *INTRODUCTION*

The pilot unit includes a Model 3012 DSP Screw Press with an Optional integrated rotary drum thickener. The demo unit rotary drum thickener is a 30" diameter unit followed by a 12" diameter screw press. The unit can be operated with the pre-thickening drum, or can be operated as a screw press only. The Screw Press unit is skid mounted on a trailer with all of the accessories to provide a complete dewatering system. The skid includes a 5 HP Bornemann progressive cavity sludge feed pump, an emulsion polymer blending unit, a filtrate recycle system, a small belt conveyor, and a control panel providing automatic control of the entire system. The control panel includes a PLC and HMI touchscreen set up for single button start and single button shutdown.

3. SET UP & TEST PROCEDURES

The DSP trailer was setup on June 29^{h} and began dewatering that same day. A three inch cam-lock line was used to pull sludge from the anaerobic digester to the pilot trailer. Polymer was fed and metered from the emulsion polymer blending unit to the in line venturi mixer. All filtrate and shower water was collected in the skid-mounted drop box and piped via four inch cam-lock lines to a drain leading back to the head of the plant.

The polymer dosage, mixing intensity, sludge flow rate, screw speed and cone pressure were varied during the testing to produce a range of results for analysis. Samples were collected after these settings had reached steady state for 45 minutes. BDP Industries utilized an O'haus moisture analyzer to provide quick solids concentration results. See Appendix I for test results.

4. DISCUSSION OF RESULTS

The first order was to determine a polymer treatment scheme that would produce a suitable flocc structure. Testing done prior to the demo arriving on a sample sent by Silverton to BDP's lab found five potential candidates:

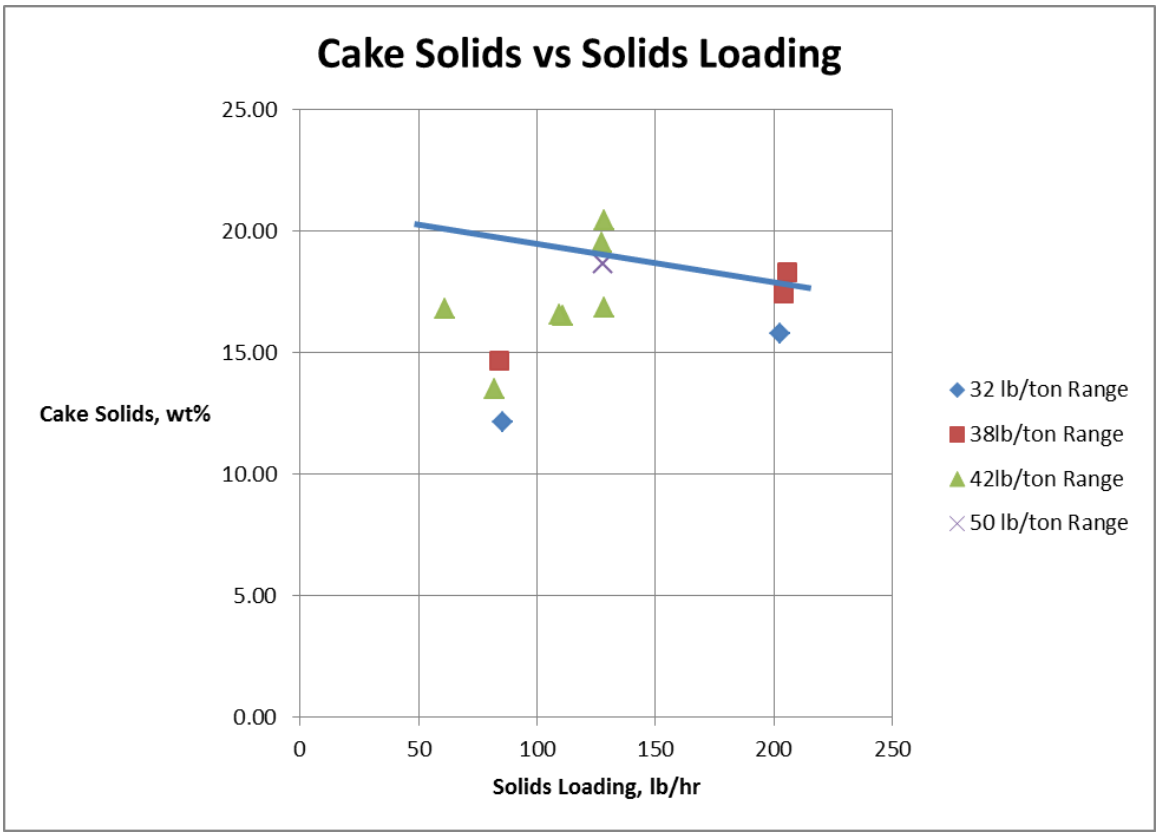
- Praestol 3011
- Praestol 3012
- Praestol 3013
- Hychem H409
- Hychem H411

All of these are structured cationic type with various charge density and molecular weights. The only polymer that produced a good flocc was Praestol 3012. Therefore for the duration of the testing only the Praestol 3012 was used. After determining a suitable polymer the test program was started in which flow rate, drum and screw speed, polymer dosage and sludge / polymer mixing and dilution where varied to establish performance expectations. Process data were collected over the test program, and are shown in Appendix I.

4.1. SOLIDS LOADING

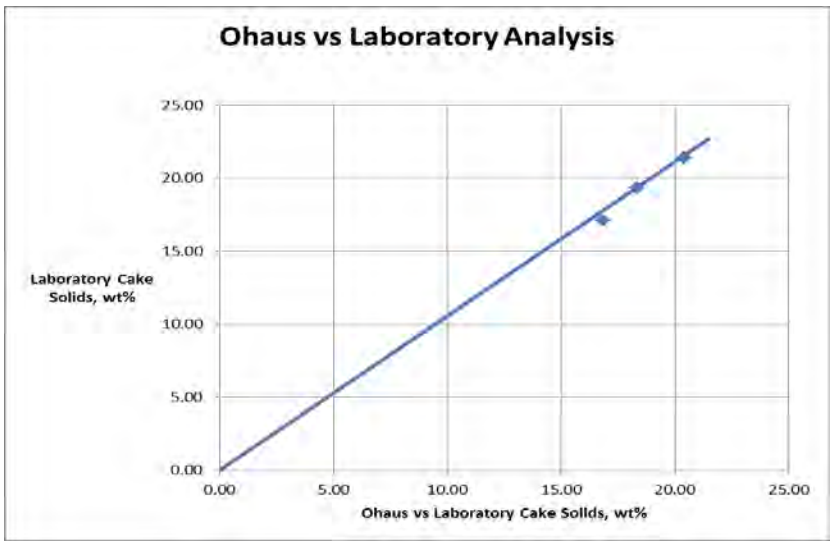
Cake solids are dependent on the sludge characteristics, polymer used, conditioning / mixing, and the residence time in the press to express the free water. The residence time is directly related to solids loading expressed in dry pounds per hour. The relationship is an inverse relationship between discharge cake solids and solids loading (throughput). The driest discharge cake will be achieved at the lower throughputs, all other parameters being constant. The graph below shows the test results. At first glance the data would suggest that at higher solids loading higher cake solids would be achieved. As will be explained later the line drawn in figure 1 is most likely the expected performance when conditioning / mixing of polymer and sludge and polymer dosage are optimized.

Figure 1



Solids concentrations were determined using an Ohaus Instrument which provides the analysis in less than 20 minutes. Sample splits were sent to the laboratory where standard analysis methods were employed. Figure 2 below shows the Ohaus produced accurate data and if anything the cake solids determined by the Ohaus were a little lower than standard laboratory proceedures.

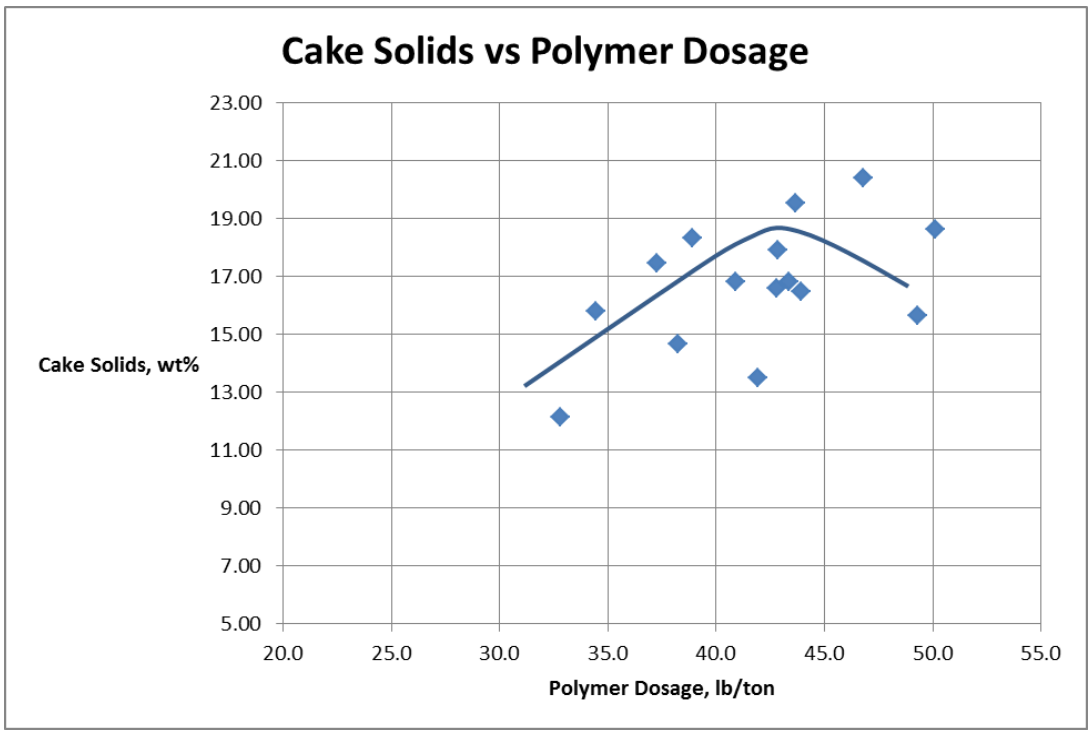
Figure 2



4.2. POLYMER DOSAGE

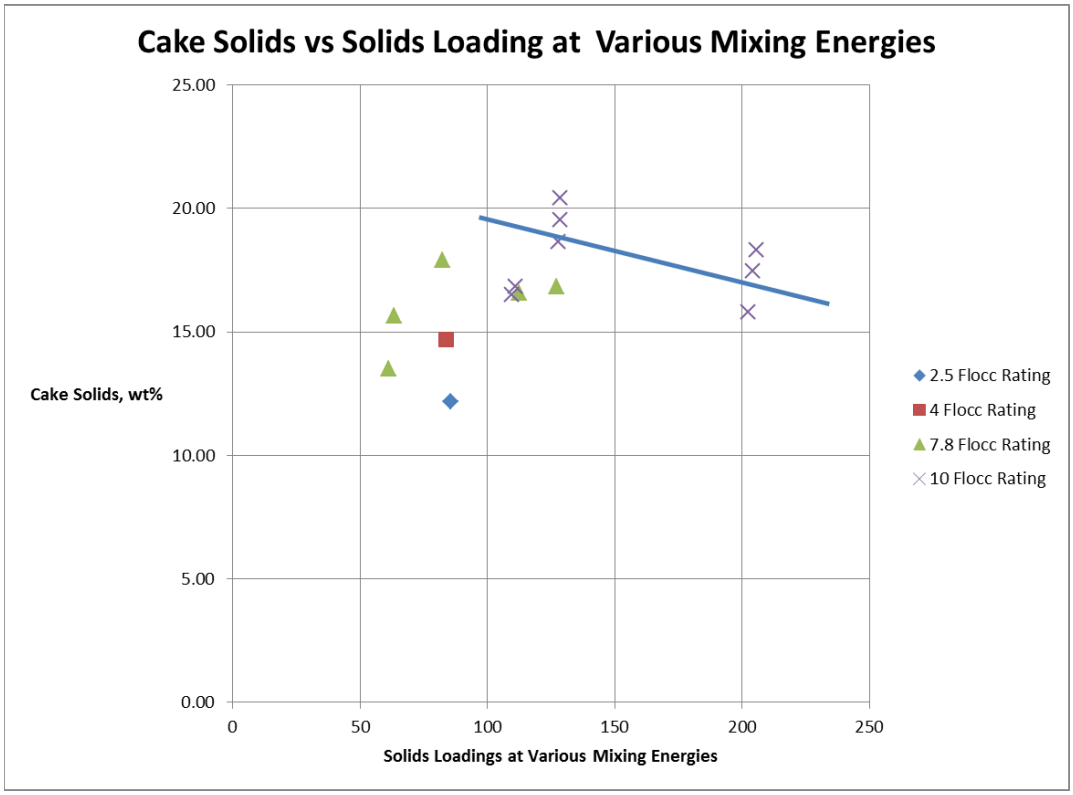
Typical mechanical dewatering shows increased cake solids with increased chemical dosing until an optimum is reached after that point increased polymer causes a drop in cake solids. The graph below shows the results achieved in the testing and indicate that optimum polymer dosage is around 40lb/ton. When the polymer dosage was increased to 50lb/ton, cake solids were lower.

Figure 2



During the testing a flocc structure rating, from 1 to 10 scale, was given based on the observed flocc structure exiting the Rotary Drum Concentrator. The flocc structure was observed to vary based on the amount of mixing, dilution water and dosage. The rating is shown in the appendix. Figure 3 below shows the cakes solids as a function of solids loading but with a legend showing the flocc structure rating. A study of the flocc structure ratings and the data points indicated that the reason the low solids loading obtained low cake solids was the poor flocc structure. The line drawn in figure 3 and figure 1 above indicates the expected relationship between cake solids and solids loading when the conditioning / mixing and polymer dosage are optimized.

Figure 3



4.3. SOLIDS CAPTURE

Solids Capture can be interpreted as the "efficiency" of the dewatering equipment for removing solids from the treatment plant. The Solids Capture represents the percentage of material that makes it through the dewatering equipment and out for disposal, instead of being recycled to the head of the plant. The formula for calculating the solids capture is also listed.

$$Percent\ Capture = \frac{C}{F} * \frac{F - (E * \frac{Q+S}{Q})}{C - (E * \frac{Q+S}{Q})} * 100$$

Where: Q = Sludge Flow (gpm)
S = Shower and Polymer Dilution Water Flow (gpm)
C = Discharge Cake (%)
F = Feed Solids (%)
E = Filtrate (%) {Note: 10,000 mg/L = 1.0%}

The filtrate recycle system on the DSP Screw Press allows the operator to increase the solids capture beyond what is typically achieved in a screw press. Three (3) filtrate samples were collected during the pilot activity at Silverton. The filtrate analysis was determined by the plant laboratory and is shown in the attached table of Appendix 1 and based on the above equation indicates the solids capture ranged from 96% to over 99%.

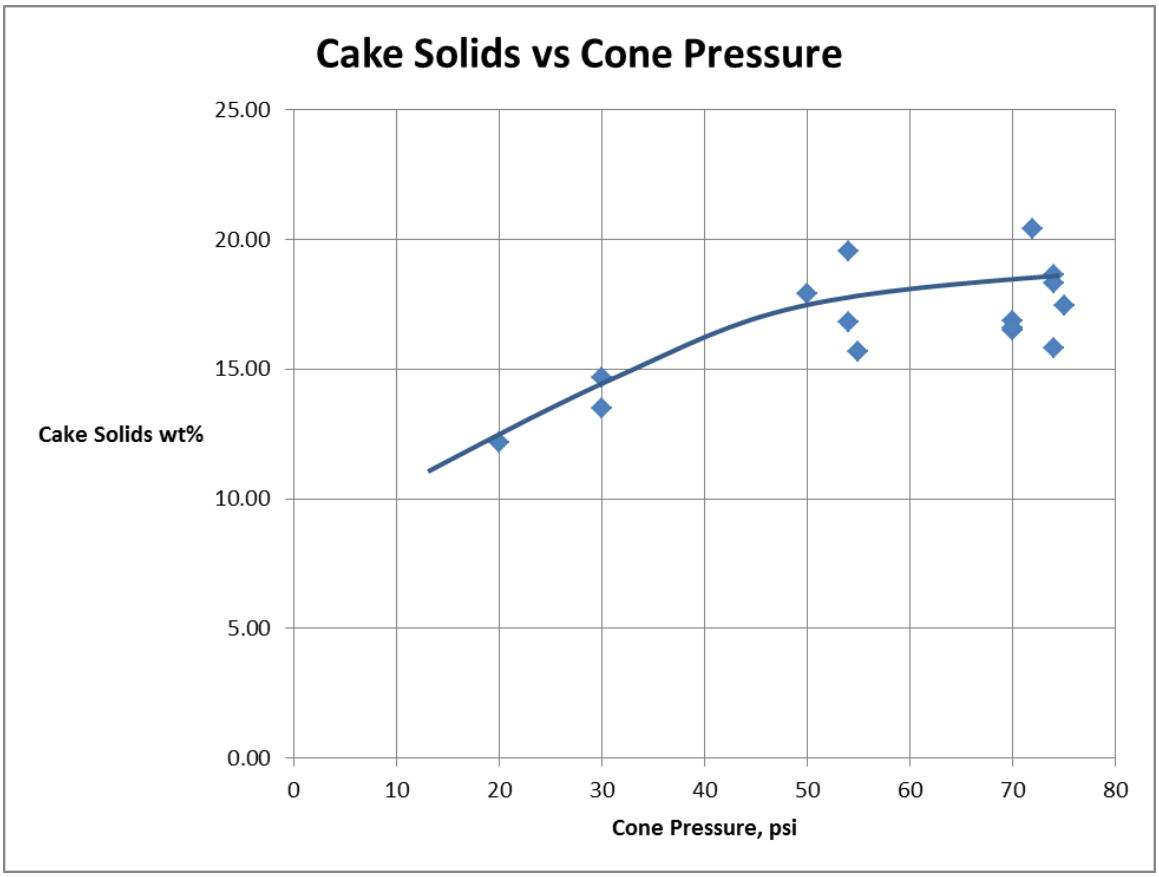
Filtrate from the Screw Press

5. CONE PRESSRE:

At the discharge of the screw there is a restrictor plate called the discharge cone that restricts the cake discharge from the screw press and is used to increase the cake solids.

Figure 4 below shows the increase in cake solids when the cone pressure is increased.

Figure 4



CONCLUSIONS AND RECOMMENDATIONS

The pilot testing at the Silverton WWTF demonstrated the performance benefits of the Model DSP Screw Press. The testing showed cake solids of 20% are possible with a solids loading in the range of 75lb/hr and 17% cake solids with solid loading of up to 200lb/ton. The recommended polymer dosage is around 38 to 40lb/ton. Solids capture will be over 96%.

APPENDIX I – OPERATING AND TEST DATA

Time (hh:mm)	Sample Type	Feed Flow Rate (gpm)	Inlet Consist. (%)	Polymer Type	Flocc Structure Rating	Solids Loading (lb/hr)	Polymer Dosage (lb/dry ton)	Polymer Conc.	Discharge Consist. (Ohaus) (%)	Plant Lab Data (%)	Plant Lab Filtrate SS Conc.	Cone Pressure (psi)	Solids Capture %	Comments
6/29/2015	Inflow	11:00 AM							1.58					427400 gallons start. Anaerobic digestion only
11:30	cake	12.8	1.58	3012	2.5	85	32.8	0.32%	12.16			20		definetly the bottom of the dosage at 24# - filtrate ok, floc a little loose
12:32	cake	12.6	1.58	3012	4	84	38.2	0.37%	14.68			30		Good filtrate and cake, but 290 may be too hot
1:10	cake	12.4	1.58	3012	7	82	42.8	0.40%	17.92			50		Filtrate good, big floc, just can't dry it out
1:05	inflow					#VALUE!	#VALUE!	#VALUE!	1.15					Inlet pressures rising,
3:30	cake	13.0	1.15	3012	7	63	49.3	0.36%	15.65			55		Change to 279- 45# and no floc - changing to 292 - 42# and bad filtrate
6/30/2015	inflow					0	#DIV/0!	#DIV/0!	1.12					Back to 290 - tough sludge- back to good filtrate, decent cake but high dosage
8:50	cake	12.9	1.12	3012	7	61	41.9	0.29%	13.50			30		Good filtrate, cake improving - high dosage still
9:58	cake	25.7	1.12	3012	7	127	40.9	0.43%	16.82			54		Mixing pressure up, better floc, better cake, good filtrate
10:59	cake	25.9	1.12	3012	9.6	128	43.7	0.47%	19.54			54		found out digester is 2/3 secondary and 1/3 primary
12:00	cake	25.9	1.12	3012	10	128	46.8	0.50%	20.42	21.40	64.00	72	99.5	nice granulat floc, great filtrate - mixing made huge difference
12:59	cake	25.8	1.12	3012	10	128	50.1	0.53%	18.64			74		monster floc, foamy filtrate
1:35	cake	40.1	1.12	3012	10	202	34.4	0.44%	15.79			74		takes 35# at this flow rate to get filtrate acceptable
2:28	cake	40.4	1.12	3012	10	204	37.3	0.48%	17.45			75		decent cake, good filtrate
3:30	cake	40.7	1.12	3012	8.9	206	38.9	0.50%	18.33	19.30	145.00	74	98.8	
7/1/2015	inflow					0	#DIV/0!	#DIV/0!	0.98					
9:20	cake	25.6	0.98	3012	10	111	43.3	0.37%	16.84	17.10	326.00	70	96.9	Good filtrate, good cake
10:45	cake	25.3	0.98	3012	9.6	109	43.9	0.37%	16.49			70		Steady state- Eric and Emily from Keller come by, Gordon from Tetra Tech by
11:40	cake	25.9	0.98	3012	6.7	112	42.8	0.37%	16.58			70		

LAB REPORT

Report No.: L-12758
Opportunity No.: 1714667-1
Application: 2997-0017
Product Home: 4417, 4418
Division: 41

Date Report Issued: July 16, 2015
Date Sample Received: June 25, 2015
Author: Liza Chowdhury
Copy: Piche, Hausegger

Customer: City of Silverton
Plant Name: Silverton WWTP
Attention: Mr. Steve Starner
400 Schemmel Lone
Silverton, OR, 97381
Phone: 503-873-5439
E-mail: sstarner@silverton.or.us

ANDRITZ Rep.: APSCO LLC
Attention: Mr. Shawn Clark
6901 NW Appaloosa Ln.
Corvallis, OR 97330-9126
Phone: (541) 602-3016
E-mail: sclark@apsco-llc.com

ANDRITZ Separation Inc.
Area Sales Manager: Mr. Denis Piché
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Email: denis.piche@andritz.com
www.andritz.com

Table of contents

ANDRITZ LABORATORY REPORT

COMPANY	:	City of Silverton Silverton, OR
SAMPLE TYPE	:	Aerobically Digested Sludge
DATE	:	July 16, 2015

Introduction:

Five (5) gallons of sludge was received in the ANDRITZ laboratory on June 9, 2015 from the Silverton WWTP for dewatering tests simulating ANDRITZ Belt Filter Press (BFP), Centrifuge and Screw Press (SP). The WWTP treats an average flow of 1.5 MGD and has a design capacity of 7 MGD. The influent wastewater is coarse screened prior to grit removal. The wastewater is gravity settled and floated with dissolved air for primary treatment. The overflow from the primary clarifier is treated in aerated basins for nitrification using diffused air. Sludge from primary and secondary clarifiers is blended and anaerobically digested for volatile solids destruction. The facility currently has no dewatering equipment for the 25,000 gallons per day (GPD) of anaerobically digested sludge. Thus the city is investigating new technology that will reduce their hauling cost.

Objectives:

The specific objectives of these laboratory tests were:

1. To describe the physical characteristics of the sample received.
2. To conduct polymer evaluation tests and determine the most effective polymer for centrifuge dewatering.
3. To conduct centrifuge spin-down tests and determine cake dryness for anticipating performance of ANDRITZ centrifuge compare to plant's existing dewatering process.
4. To conduct Belt Filter Press (BFP) dewatering test and anticipate cake dryness.
5. To conduct Screw Press (SP) test and anticipate cake dryness.

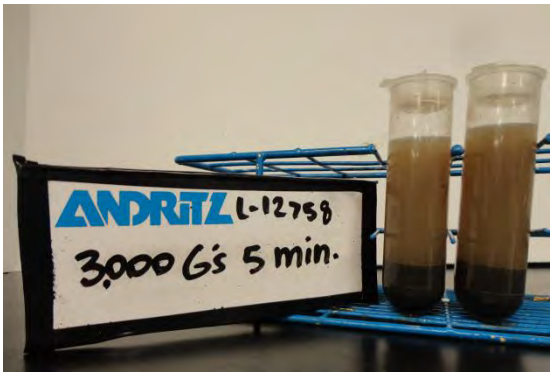
Conclusions:

The results of laboratory testing indicated that:

1. The sample received was dark brown in color and emitted a musty odor. It contained 1.5%TS (Total Solids) and 1.4%TSS (Total Suspended Solids). Volatile Solids content was 74.5% of TS and the Capillary Suction Time (CST) was 856.4 seconds. Particle size analysis conducted on the sludge indicated a fine particle size distribution with 84.0% of TS less than 45 microns.

   Centrifuge spin-down test on the raw sludge at 3000 G's produced a plug solids content of 4.7%TS and a cloudy supernatant. The sample (as received) and spin-down tubes are shown below:

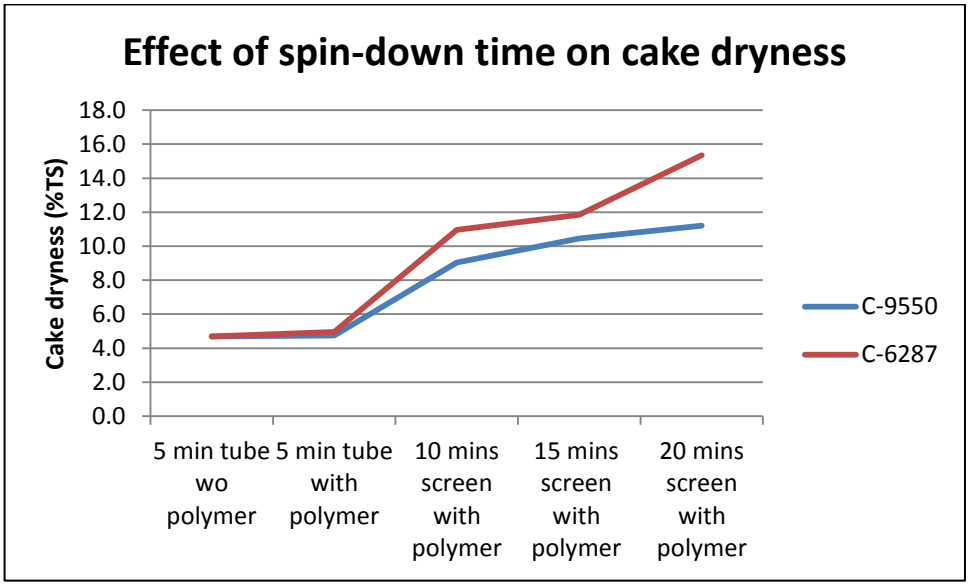
L-12747 (as received)



Spin-down Tubes

2. Several cationic emulsion polymers were tested on the sludge. The most effective polymer tested was Polydyne C-6287 at an active dosage rates of 34.5 lbs/ton TS. The second most effective polymer was Polydyne C-9550 at an active dosage rate of 35.4 lbs/ton TS.

3. Centrifuge spin-down tests were conducted on the sample at 3000 G's using C-6287 and C-9550 polymers. The sample produced a cake dryness of 14±1%TS using C-6287 and 10±1%TS using C-9550. Cake dryness vs. time curve is shown below:



4. Belt Filter Press (BFP) testing was conducted simulating ANDRITZ 2.0m SMX®-S8 BFP using C-9550. Cake dryness of 12±1%TS was achieved at the solid capture rate of 95%+. The cake was soft and malleable after doctoring and did not fully clean from the filter fabric. A photo of Industrial Fabrics Corporation (IFC) 6093 filter fabric is shown below:

2. Screw Press (SP) simulations were conducted on the sample using a 10cm x 10cm box with a perforated plate with 1mm openings placed in the bottom. Pressure was then applied by a pressure platen with a pneumatic cylinder. C-9550 was used for flocculation at a dosage rate of 35.4 active lbs/ton TS. The sample was first allowed to drain in the box with gentle mixing using a spatula to simulate the feed section of the SP. The sample drained quickly. After 1 minutes of drainage, pressure was gently applied and increased with time. The cake was then removed from box and cake thickness measured at 12 mm for 1000 gm and 5.5 mm for 500 gm of sample size. Minimum cake dryness was measured at 9.5±2%TS. SP cake dryness is expected to be between that of the BFP and Centrifuge.

Lab Wedge press unit

Test Data:

A. Sample Analysis

Total Solids (%TS @ 105°C)	1.5	
Suspended Solids (%TSS @ 105°C)	1.4	
Plug Solids (%TS, @ 3000G's and 5 minutes)	4.7	
pH @ 21°C	7.5	
Volatile Solids Content (% of TS)	74.5	
Capillary Suction Time (sec)	856.4	
Screened Solids:		Description
+30 Mesh Fraction (% of SS)	4.1	Debris, Fiber
30 x 50 Mesh Fraction (% of SS)	2.2	Debris, Fiber
50 x100 Mesh Fraction (% of SS)	2.0	Grit, Fine Fiber
100 x 140 Mesh Fraction (% of SS)	2.2	Grit, Fine Fiber
140 x 230 Mesh Fraction (% of SS)	3.5	Biomass
230 x 325 Mesh Fraction (% of SS)	2.0	Biomass
-325 Mesh Fraction (% of SS)	84.0	
Sludge Volume Index (SVI ml/g)	70.0	
Settled Solids (1000 ml @ 30 min)	999.0	
Color	Dark Brown	
Odor	Musty	

B. Polymers Tested

Ashland : K144L, K290FLX
BASF : 8868FS
Polydyne : C-6227, C-6257, C-6287, C-9550, C-6266, C-6296

C. Centrifuge Test Results

Spin Time (Minutes)	G Force	Type Of Test	Polymer Type	Polymer Dosage Rate (active lbs/ton TS)	Plug Solids (%TS)	Anticipated Cake Solids (%TS)
5	3000	Glass Tube	None	None	4.7	14±1
5	3000	Glass Tube	C-6287	34.5	5.0	
10	3000	Screen	C-6287	34.5	10.4	
15	3000	Screen	C-6287	34.5	12.4	
20	3000	Screen	C-6287	34.5	15.4	

Spin Time (Minutes)	G Force	Type Of Test	Polymer Type	Polymer Dosage Rate (active lbs/ton TS)	Plug Solids (%TS)	Anticipated Cake Solids (%TS)
5	3000	Glass Tube	None	None	4.7	10±1
5	3000	Glass Tube	C-9550	35.4	4.8	
10	3000	Screen	C-9550	35.4	9.0	
15	3000	Screen	C-9550	35.4	10.5	
20	3000	Screen	C-9550	35.4	11.2	

D. Belt Filter Press Test Results

BFP Type	2.0m SMX®-S8	2.0m SMX®-S8
Recommended Polymer	C-9550	C-9550
Active Polymer Dosage (lbs/ton TS)	35.4	35.4
Recommended Belt Type	IFC 6093	IFC 6093
Throughput (lbs TS/hr)	540	731
Throughput (GPM)	72	100
Solids Capture (% SS ± 1%)	95	95
Belt Speed (FPM)	5.6	7.7
Cake Thickness (mm)	5	7
Cake Solids (%TS)	13.5	13.3

E. Screw Press Test Results

Sample Size (g)	500	1000
Recommended Polymer	C-9550	C-9550
Active Polymer Dosage (lbs/ton TS)	35.4	35.4
Drainage time (min)	1	1
Total pressure time (min)	6	6
Maximum pressure applied (psi)	9	9
Cake Thickness (mm)	5.5	10
Cake Solids (% TS)	11.5	9.6

Discussion:

The sample received was dark brown in color and emitted a musty odor. This sample contained 1.4%TSS and 74.5%TS volatile solids. A cake dryness of 14±1%TS can be anticipated from an ANDRITZ Decanter Centrifuge using C-6287 polymer at an active dosage rate of 34.5 lbs/ton TS.

Cake dryness of 11 to 13%TS can be expected from ANDRTIZ 2.0m SMX®-S8 BFP at 540-740 dry lbs/hr TSS throughput. The cake had some difficulty in doctoring from the filter fabric. Higher throughputs will reduce solid capture rate and cake dryness.

A limited SP test indicated that a SP can be applied for this sludge. The anticipated cake dryness will be between that of BFP and Centrifuge.

Attached are photographs of the screen analysis and lab sample data sheets for the sample received for reference and comparison.

The remaining untested sludge will be disposed into the sewer.

Liza Chowdhury
Process Engineer

LC/sk

Attach.

Copies of this report have been distributed to the following:

Original +1cc/ Lab
1 cc/ Denis Piché
Sig Hausegger

Attachment A – Photographs

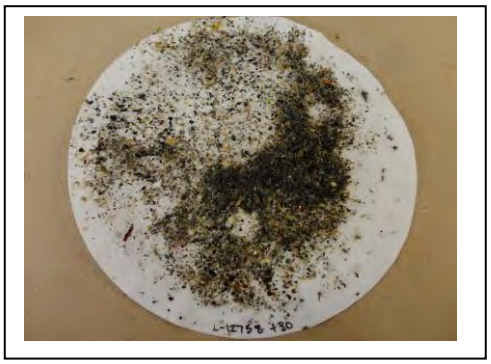


Photo #1: +30 Mesh Fraction

Photo #2: 30X50 Mesh Fraction

Photo #3: 50X100 Mesh Fraction

Photo #4: 100X140 Mesh Fraction

Photo #5: 140X230 Mesh Fraction

Photo #6: 230X325 Mesh Fraction

Attachment B – Lab Sample Data Sheets:

III. HAZARDOUS MATERIALS

Hazardous waste definition and classification from the Texas Administrative Code (TAC) is as follows:

CLASS I WASTES — Any industrial solid waste or mixture of industrial solid wastes which, because of its concentration or physical or chemical characteristics, is toxic, corrosive, flammable, a strong sensitizer or irritant, or a generator of sudden pressure by decomposition, heat, or other means, and which may pose a substantial present or potential danger to human health or the environment when improperly processed, stored, transported, or disposed of or otherwise managed, including hazardous industrial waste.

CLASS II WASTES — Any individual solid waste or combination of industrial solid waste that cannot be described as Class I or Class III as defined in this regulation.

CLASS III WASTES — Inert and essentially insoluble industrial solid waste, usually including, but not limited to materials such as rock, brick, glass, dirt, and certain plastics and rubber, etc., that are not readily decomposable.

NOTE: Hazardous waste samples can include, but are not limited to: petroleum and petrochemical sludges; petroleum and gasoline storage tank bottoms; insecticide residues; PCB's (polychlorinated biphenol); most chlorinated hydrocarbons; heavy metal sludges (chromium, copper, zinc, lead, mercury, cadmium, nickel, barium, arsenic and antimony, to name the most common ones); radioactive materials; samples above pH 9.5 and below 5.5; paint sludge; and cyanide wastes.

IV. ANDRITZ LABORATORY MUNICIPAL WASTEWATER SAMPLE DATA SHEET

DATE: 6/9/2015 **INQUIRY #:**

ANDRITZ Representative and/or Salesman:
Peter olsen Keller Associates, INC.
503 364 2002

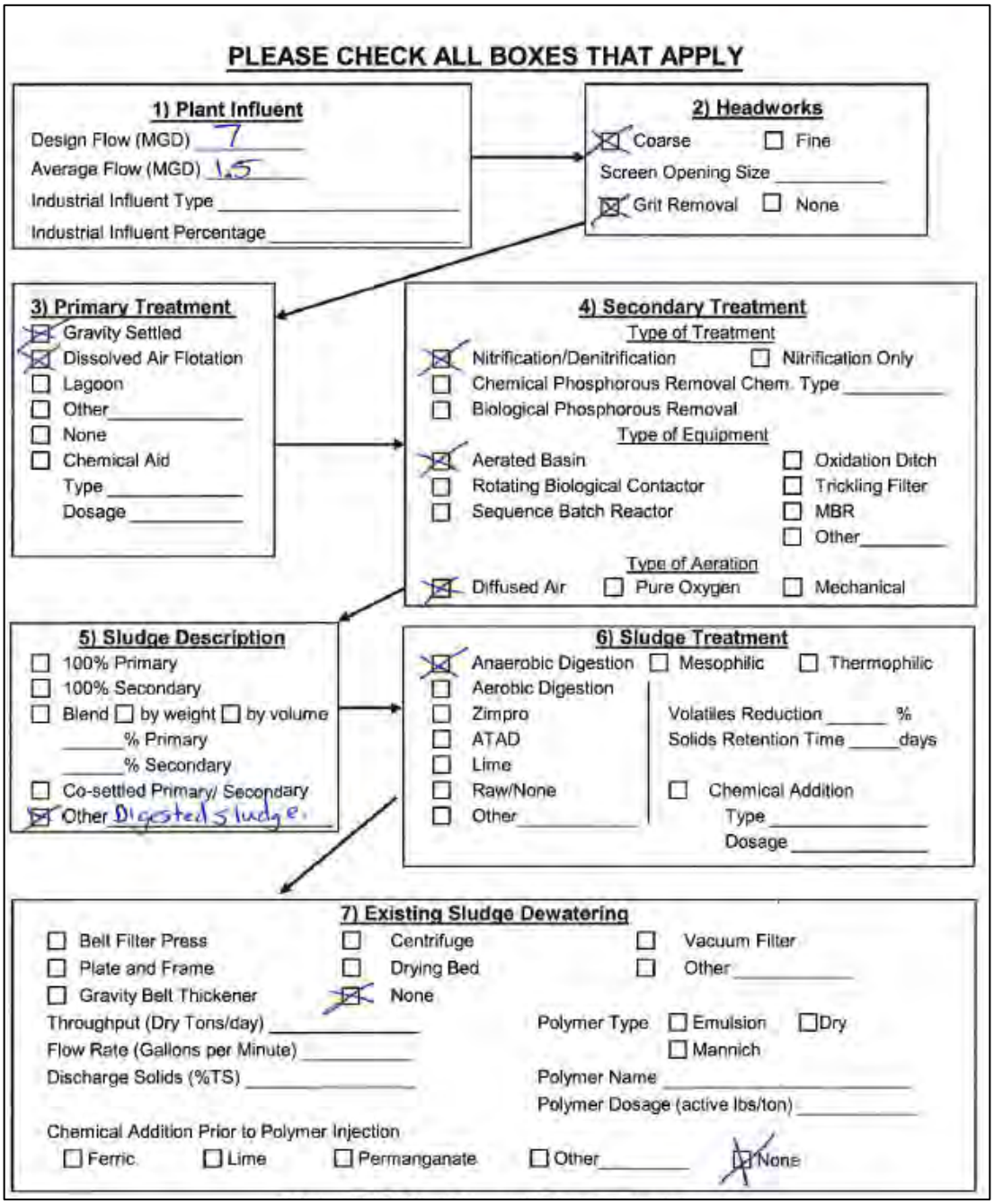
CLIENT:

Company: City of Silverton Contact: Steve Starner
Plant/Mill Address: 400 Schemmel Lane
City: Silverton State: OR Zip: 97381
Phone: 5038735439 Email/Fax: sstarner@silverton.or.us

Sample Characteristics: (This information is to be supplied by Customer to determine whether sample is typical of normal operation).

Date Collected:
Sludge or Slurry Consistency: (% Total Solids) 1.4
(% Suspended Solids) ? Ash Content (% of Total Solids):
pH @ Temperature (101 °F or 7.12 pH): Specific Gravity:
Capillary Suction Time (sec)

****Please include a process flow sheet of the facility with this data sheet.**



PRIME SOLUTION ROTARY FAN PRESS® PILOT TESTING REPORT FOR SLUDGE DEWATERING

Silverton - WWTP (Silverton, OR)

Testing Date(s): April 18th – April 19th, 2016

PRIME SOLUTION

DEWATERING PERFORMANCE SIMPLIFIED

Prime Solution, Inc.
610 S. Platt Street
Otsego, MI 49078
(269) 694-6666
www.psirotary.com

Table of Contents

Key Information:

Plant Site:	Silverton - WWTP 400 Schemmel Lane Silverton, OR 97381
Plant Contact:	Mr. Steve Starner (503) 873-5439 sstarner@silverton.or.us
Prime Solution Sales Representative:	Whitney Equipment Company Mr. Dave Bobbett (360) 558-0784 dbobbett@weci.com
Testing Date(s):	April 18th – 19th, 2016
Prime Solution Pilot Equipment:	RFP36 Rotary Fan Press 2.0
Application Type:	Municipal
Plant MGD:	AVG. 1.5 MGD
Sludge Type:	Activated
Process Type:	Anaerobic Digestion
Sludge Age:	~21 Days
Feed Solids Range:	1.49 – 1.50% TS
Volatile Solids Range:	76.9 – 77.8% TVS
Dry Cake Solids Range:	**17.0 – 18.4% TS**
Averaged Dry Cake Solids:	**17.5% TS**
Averaged Capture Rate:	98.6% TSS
Averaged Active Polymer Usage:	25.32 lbs/dry ton
Averaged Press Energy Usage:	1.26 kW
Lab(s):	Prime Solution, Inc.
Prime Solution Regional Sales Manager:	Mr. Joe Dendel (616) 540-0500 joe@psirotary.com
Report Prepared By:	Mrs. Randi Yeaman (269) 694-6666 ryeaman@psirotary.com
Report #:	PR160503-1

Summary:

On-site pilot testing was performed by Prime Solution, Inc. on April 18th – 19th, 2015 for Silverton - WWTP in Silverton, OR. The purpose of the pilot test was to determine the dewaterability of the Activated Anaerobically Digested Sludge that is produced at the Plant. The results listed in this report confirm that the Rotary Fan Press can effectively dewater the sludge produced at the Plant.

The Rotary Fan Press operated consistently over the two (2) day trial period with a total number of nine (9) samples pulled at various sludge flow rates. All samples were collected and tested by Prime Solution. The cake solids ranged in dryness from 17.0 – 18.4% TS during the testing period with excellent capture rates averaging 98.6% TSS.

Equipment Description:

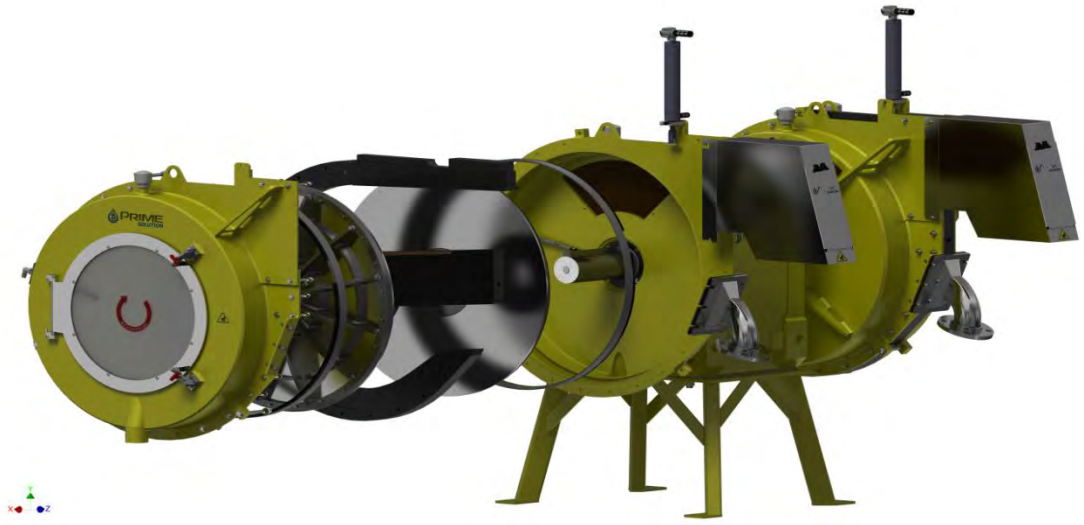
The mobile pilot unit that was used for the testing is a full-scale Prime Rotary Fan Press® Model #RFP36-2.0 including all of the necessary equipment to condition the sludge/slurry, pump the filtrate back to the plant and transfer the dewatered cake solids for disposal.

➢ RFP36 Rotary Fan Press (2.0)	➢ In-Line Grinder
➢ PrimeBlend Emulsion Polymer System	➢ Flocculator Assembly
➢ Rotary Lobe Sludge Feed Pump	➢ Folding Sludge Cake Conveyor
➢ Wash Water Booster Pump	➢ Central Operator Control Panel
➢ Filtrate Pump w/ Float Control	➢ Chemical Feed System

The Prime Rotary Fan Press® operates using the low differential pressure between the incoming conditioned sludge and the outgoing sludge cake combined with the very slow (<1 rpm) rotational motion of the two (2) filter screens to advance the sludge through the press. As the conditioned sludge enters the annular space between the filter screens a pressure differential develops within the press where the liquid portion of the conditioned sludge seeks to the path of least resistance through the filter screens. The remaining solids are collected inside the annular space between the filter screens which advance towards the discharge end of the press. At the discharge end of the press, an adjustable restrictor gate arm slows down the advancing solids forming a "cake" plug. As the plug builds within the restriction discharge area, it pushes towards the inside walls of the filter screens and the slow rotation/friction of the filter screens continuously moves the cake solids past the restrictor gate arm to be discharged for disposal or further processing. Operation of the Prime Rotary Fan Press® can either be continuous or intermittent depending on your application. Clean-up is a simple push of a button which will automatically run the wash cycle.

Equipment Description Continued:

The totally enclosed, slow moving (<1 rpm), small footprint design with the lowest maintenance of any mechanical dewatering technology provides for long sustainable dewatering.

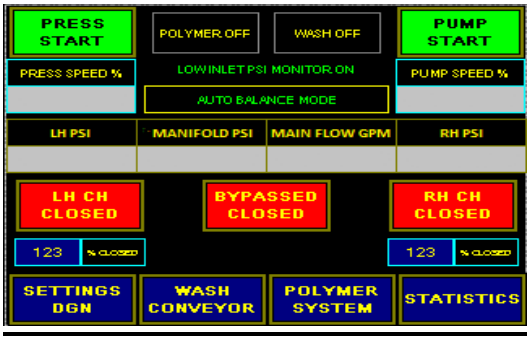


Basic construction of the Prime Rotary Fan Press®

The Rotary Fan Press has very few mechanical parts as illustrated above. The simple slow moving dewatering channel assembly provides for a clean enclosed working environment, long service life and with standard tools any adjustments and/or repairs can be completed simply and quickly.

The dewatering rate is scalable by multiplying the throughputs (sludge flow & solids loading) listed in the pilot test data table on page 7 by the square foot of filtration area/channel of each of the Base Model Rotary Fan Press sizes listed below.	
Base Model RFP	**Filtration Area**
RFP24"	4.5 ft²/channel
RFP36"	10.9 ft²/channel
RFP48"	20.0 ft²/channel

The unit is controlled by a PLC touch screen which provides fine adjustments of the system. This system gives infinite control of the unit and allows for accurate detailed refinement of the operating parameters. From the touch screen the operator has the option to control the dewatering process from the sludge feed all the way through to the sludge cake transfer, thus interlocking the entire system for semi-automatic operation.



Pilot Testing Results:

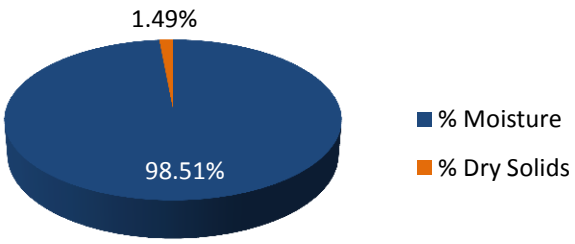
The Rotary Fan Press was on-site at Silverton - WWTP for 2 days (April 18th – 19th, 2016) and operated at varying flow rates, polymer types and polymer dosages. Day one April 18th was used as set up, then that day and the following day several samples were taken of the sludge cake/filtrate and split with the plant for analysis. Using different polymers at different concentrations showed varying results, which was noted on the last day the mixing energy used to blend the polymer with the sludge had an equal effect on the cake solid dryness.

Results Overview:
Sludge flow ranged 1.2 – 3.0 gpm/ft², Averaged feed solids were 1.49% TS, Solids loading ranged 9 – 22.4 lbs/hr/ft², Averaged cake solids were 17.5% TS, Capture rates averaged 98.6% TSS, Averaged press energy was 1.26 kW for the testing period.

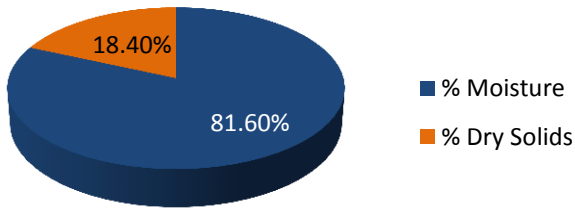
Polymer Consumption:
Drawing the sludge into the Rotary Fan Press system and at the suction side of the pump, the diluted/blended polymer was added to the incoming sludge where it was mixed in-line to form a stable floc before entering the dewatering channel(s) of the Rotary Fan Press. The averaged polymer dosage for the pilot testing was 25.32 active lbs/dry ton.

The Table On The Following Page Details The Following:
Date and time of sample collection, Rotary Fan Press operating parameters: press speed %, energy usage (press kW), inlet and gate pressures, polymer results, sludge processing flow (gpm/ft²), feed solid concentration (% TS), solids loading (lbs/hr/ft²), cake solids (%TS) and capture rate (mg/L & %TSS).

Averaged Feed Solids
% Moisture vs. % Dry Solids



Maximum Cake Solids
% Moisture vs. % Dry Solids



Pilot Testing Results Continued:

Plant: Silverton - WWTP

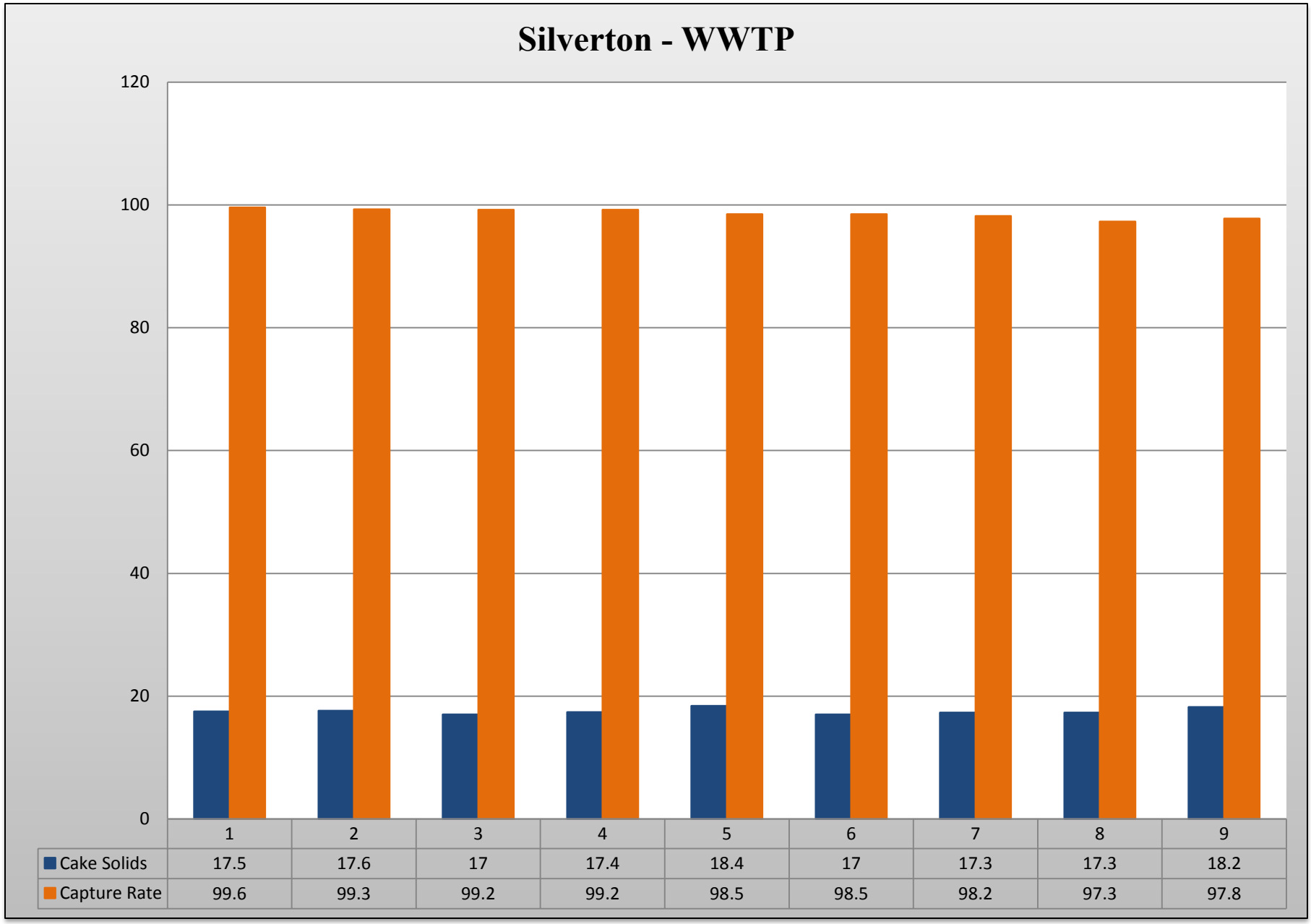
Sludge Type: Municipal

Process: Activated Anaerobically Digested Sludge

Base Model Pilot Equipment: RFP36 – Rotary Fan Press 2.0

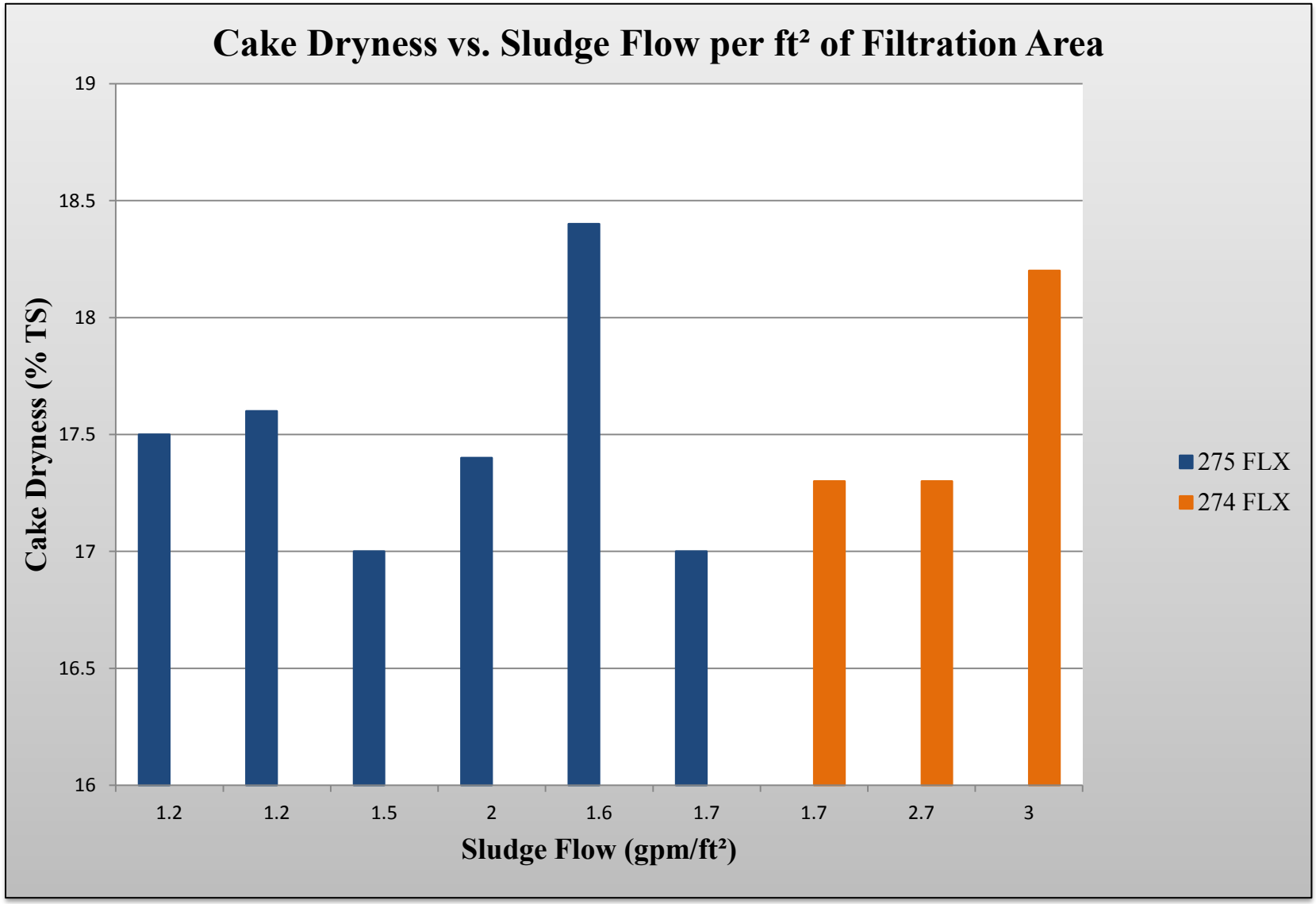
Sampling			Rotary Fan Press						Polymer						Results					
Run #	Date	Time	Model Type	Filt. Area ft²	Press Speed %	Press Energy kW	Inlet PSI	Gate PSI	Type	Neat Flow gph	Dil. Water gpm	Conc. %	Act. %	Active lbs/d.t.	Sludge Flow gpm/ft²	Feed Solids %TS	Solids Loading lbs/hr/ft²	**Cake Solids %TS**	Capture Rate mg/L	Capture Rate %TSS
1	4/18	10:45	RFP36 -2.0	10.9	25	1.30	2.8	60	275	0.330	2.7	0.20	40	25.5	1.2	1.50	9	**17.5**	58	99.6
2	4/18	11:05	RFP36 -2.0	10.9	20	1.30	5.2	60	275	0.330	2.7	0.20	40	25.5	1.2	1.50	9	**17.6**	98	99.3
3	4/18	11:30	RFP36 -2.0	10.9	25	1.24	3.4	60	275	0.606	2.7	0.37	40	37.5	1.5	1.50	11.3	**17.0**	120	99.2
4	4/18	11:50	RFP36 -2.0	10.9	25	1.25	4.8	60	275	0.606	2.4	0.42	40	28.1	2.0	1.50	15	**17.4**	118	99.2
5	4/18	1:50	RFP36 -2.0	10.9	25	1.25	3.8	60	275	0.661	2.45	0.45	40	38.3	1.6	1.50	12	**18.4**	224	98.5
6	4/19	8:45	RFP36 -2.0	10.9	25	1.32	3.4	60	275	0.220	1.7	0.22	40	12.1	1.7	1.49	12.7	**17.0**	220	98.5
7	4/19	9:05	RFP36 -2.0	10.9	25	1.24	4.6	60	274	0.386	1.9	0.34	40	21.2	1.7	1.49	12.7	**17.3**	274	98.2
8	4/19	9:30	RFP36 -2.0	10.9	35	1.23	4.6	60	274	0.579	2.7	0.36	40	20	2.7	1.49	20.1	**17.3**	400	97.3
9	4/19	10:00	RFP36 -2.0	10.9	40	1.22	5.8	60	274	0.634	3.1	0.34	40	19.7	3.0	1.49	22.4	**18.2**	332	97.8

Pilot Testing Results Continued:

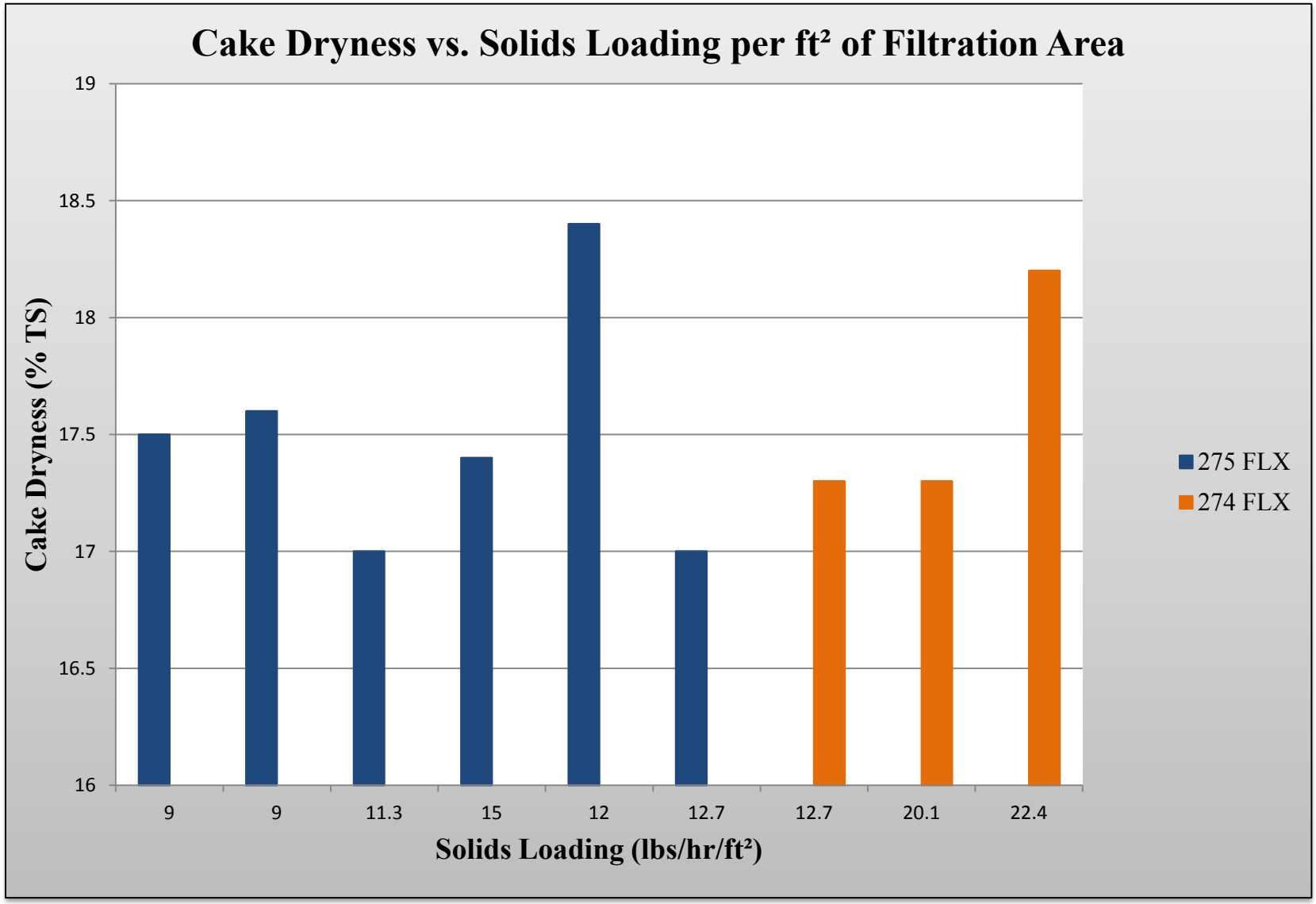


	1	2	3	4	5	6	7	8	9
Cake Solids	17.5	17.6	17	17.4	18.4	17	17.3	17.3	18.2
Capture Rate	99.6	99.3	99.2	99.2	98.5	98.5	98.2	97.3	97.8

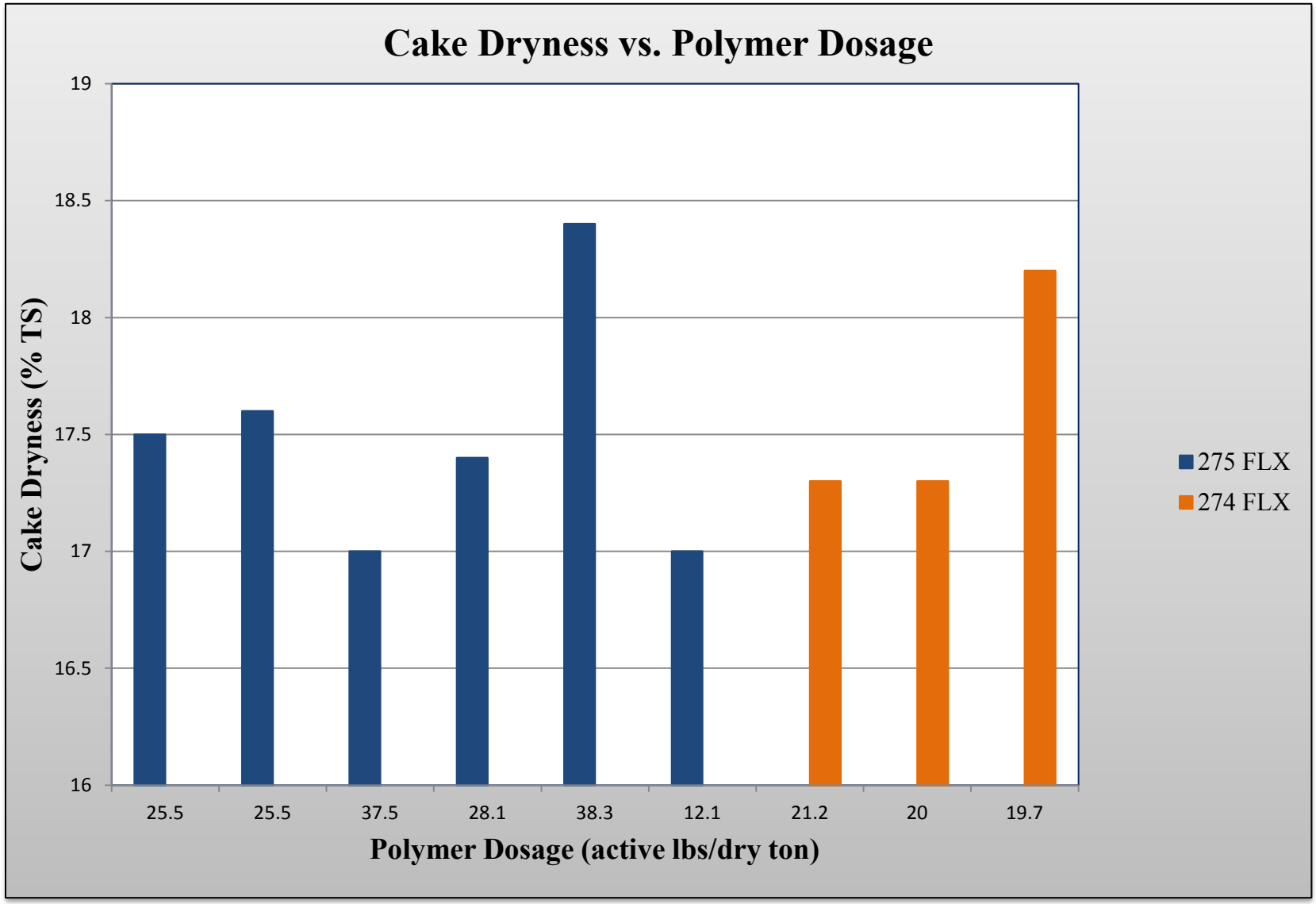
Pilot Testing Results Continued:



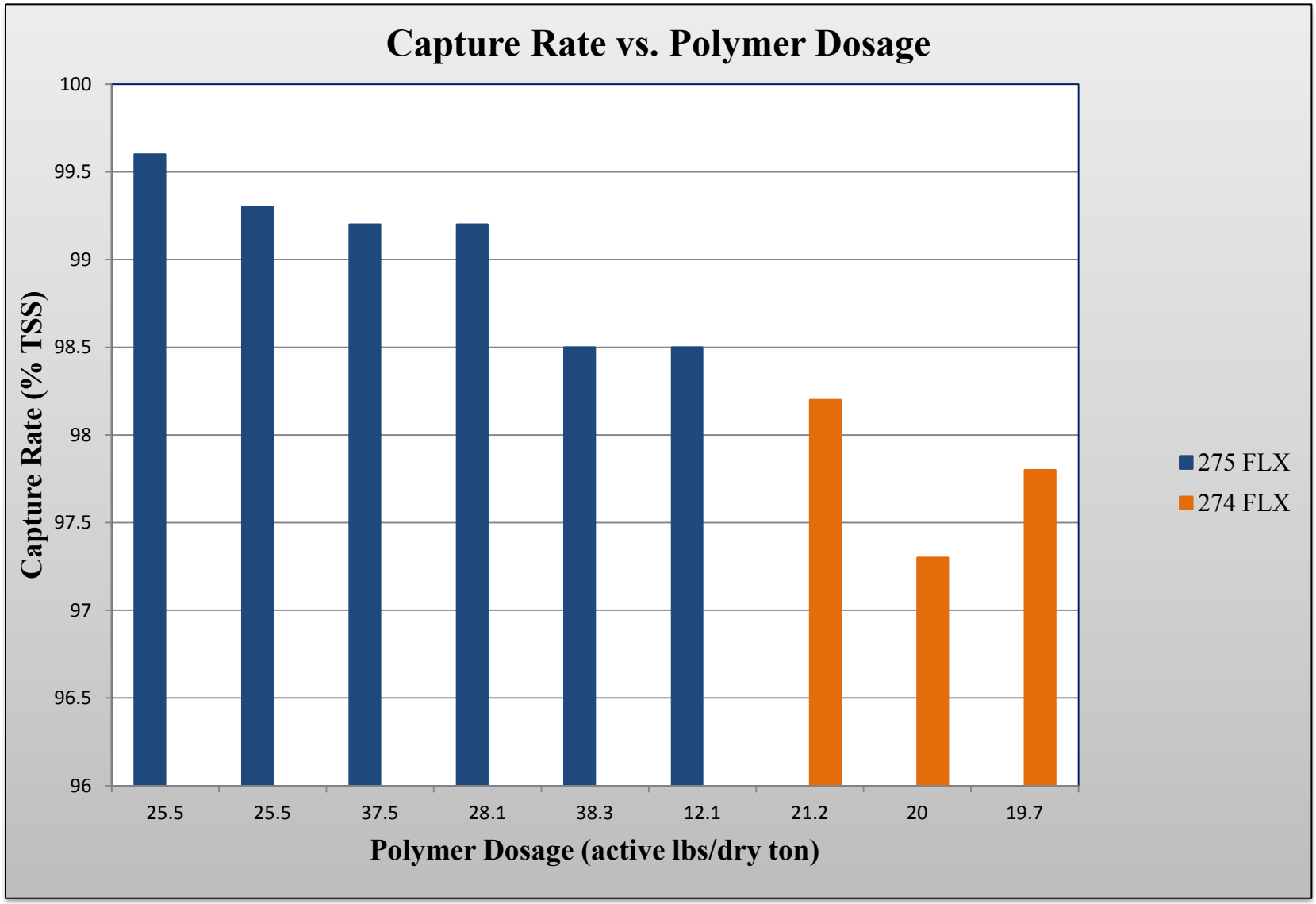
Pilot Testing Results Continued:



Pilot Testing Results Continued:



Pilot Testing Results Continued:



On-Site Pictures:

Conclusion:

This demonstration successfully illustrated the simplicity, ease-of-use and semi-automatic operation of the Rotary Fan Press, along with its ability to consistently produce dry cake solids — while using low energy and wash water. The totally enclosed design of the Rotary Fan Press provided a clean and safe work environment that virtually eliminated odors and airborne contaminants. This environment promotes prolonged equipment and building life.

Along with ease-of-operation, low maintenance requirements were demonstrated and discussed with plant operators and engineers — as well as, the RFP's ease of installation into existing facilities. Due to its small footprint, it does not require special building modifications.

Prime Solution, Inc. and Whitney Equipment Company would like to express their gratitude to Silverton – WWTP in Silverton, OR, and everyone involved, for the opportunity and support that made this pilot possible. We look forward to providing equipment that will suit the needs of the Plant.

Mr. Joe Dendel
Regional Sales Manager
Phone: (616) 540-0500
E-Mail: joe@psirotary.com
Web: www.psirotary.com

City of Silverton

Public Works Department

To: **Christian Saxe, Public Works Director**

From: **Steve Starner, Water Quality Supervisor**

Date: **July 11, 2017**

RE: **Silverton WWTP Biosolids Storage Handling**

BACKGROUND

The two anaerobic digesters currently used to stabilize the biosolids generated by the wastewater treatment process were constructed in 1982. (The digesters process biosolids to maintain compliance with EPA regulated Class B standards.) At the same time, two concrete-lined facultative storage lagoons were constructed to provide 640,000 gallons of capacity. Initially, the lagoons were emptied on a three year cycle.

In 1999, the treatment plant hydraulic treatment capacity was increased, but no changes were made to the solids handling or storage system.

Beginning in 2000, the lagoons were filled and emptied on an annual basis. In 2002, operators removed the rock media from an abandoned trickling filter basin to create 350,000 gallons of solids storage capacity.

In 2005, the digesters were overflowing on a weekly basis due to lack of hydraulic capacity. HDR engineers proposed to convert the digesters to mixing tanks for primary and secondary solids, which would be processed with hydrated lime and then thickened by a pasteurization screw press to generate a Class A biosolid. The project was estimated to cost $7 million. The City Council was not willing to impose the sewer fees necessary to repay a $7 million loan. Council instructed staff to develop a project for $4 million to address the solids problem.

The digester rehabilitation project was completed in 2013. HDR engineers estimated an additional new digester would be needed by 2020, or a city population of 10,500. Operators removed the rock media from a second abandoned trickling filter tank to create 150,000 gallons of storage capacity.

In order to prevent a storage basin overflow, solids were hauled from Silverton to the City of Salem digesters beginning in the summer of 2015. 560,000 gallons of biosolids were hauled to Salem due to the lack of on-site storage space. 1.42 MG of Class B biosolids were land applied to grass seed fields.

RECOMMENDED ACTION

The City of Silverton is currently processing and discharging 650 MG of wastewater per year. The byproduct of the wastewater treatment process, Class B biosolids, is generated at the rate of 2.0 MG per year. The average concentration of the biosolids is 2.0% solids. The space required to store the biosolids before they can be land applied to grass seed fields, after harvest, is 270,000 cubic feet. The space currently available on-site is 152,000 cubic feet.

Several biosolids thickening processes have been evaluated and the screw press technology has become the preferred technology based on energy requirements, maintenance history, and ease of operation. The City contracted with Keller and Associates to conduct an analysis of the available technologies and the report findings showed that the screw press option would provide the greatest comprehensive benefit to the City's treatment system. As a result of those findings six different screw press manufacturers were contacted to conduct pilot studies at the Silverton facility to demonstrate an ability to reliably increase the solids content from 2% to at least 18%. [At 18%, the space required to store the annual biosolids accumulation is 30,000 cubic feet. The annual truck trips required to move the biosolids drops from 286 tanker loads per year, to 32, simply by removing the water component.]

Based on the findings of the pilot program, City staff would like to proceed with authoring procurement documents specifically tailored to our long term needs for biosolids thickening. The procurement documents will incorporate all of the data that was recorded during the pilot program. Staff has initiated discussions with the DEQ on ensuring that the system specifications meet or exceed their requirements and will continue to work closely with them during the procurement and installation process.

The desired screw press equipment would be delivered to the WWTP site on a skid mount and would be protected by a permanent structure similar to a standard pole barn. A minimal amount of engineering would be needed to do a predesign. By acting as the general contractor, the City can complete the installation and start-up of the screw press thickening process within the currently budgeted amount of $600,000.

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 8.2	**Topic:** Resolution No. 17-29 – A Resolution to Adopt the Updates to the City of Silverton Addendum to the Marion County Multi-Jurisdictional Hazard Mitigation Plan
	Report No.: 17-71	
	Agenda Type: DISCUSSION/ACTION	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Dianne Hunt	**Reviewed By:** Christy S. Wurster	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve Resolution No. 17-29 to adopt the updates to the City of Silverton Addendum to the Marion County Multi-Jurisdictional Hazard Mitigation Plan (HMP).

BACKGROUND:
In the summer and fall of 2016, the Oregon Partnership for Disaster Resilience at the University of Oregon's Community Service Center partnered with the Oregon Military Department's Office of Emergency Management, Marion County Emergency Management and Marion County cities, including Silverton, to update their addendum to the Marion County HMP, which expired July 8, 2016.

By developing this addendum to the Marion County HMP, locally adopting it, and having it approved by Federal Emergency Management Agency (FEMA), the City of Silverton will regain eligibility for FEMA Hazard Mitigation, Pre-Disaster Mitigation, and Flood Mitigation Assistance grant program funds. This HMP has been signed off by FEMA, and the City will receive a final approval letter from FEMA once they receive signed resolutions from all Marion County cities that participated.

The City of Silverton Addendum is attached for your review.

BUDGET IMPACT: **FY(s):** 2017-2018 **Funding Source:**

Attachments:
1. Resolution No. 17-29
2. City of Silverton Addendum to the Marion County Multi-Jurisdictional Hazard Mitigation Plan

CITY OF SILVERTON
RESOLUTION
17-29

A RESOLUTION OF THE SILVERTON CITY COUNCIL ADOPTING THE UPDATES TO THE CITY OF SILVERTON ADDENDUM TO THE MARION COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, the City Council by way of Resolution 11-35 previously adopted the Updates to the City of Silverton Addendum to the Marion County Multi-Jurisdictional Natural Hazards Mitigation Plan; and

WHEREAS, the City Council has reviewed the 2017 updates to the Silverton Addendum to the Marion County Multi-Jurisdictional Natural Hazards Mitigation Plan and determined that the updates are appropriate for adoption by the City; and

WHEREAS, the City recognizes the threat that hazards pose to people, property and infrastructure within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

WHEREAS, an adopted hazard mitigation plan is required as a condition of future funding for mitigation projects under multiple Federal Emergency Management Agency (FEMA) pre-and post-disaster mitigation grant programs; and

WHEREAS, the City has fully participated in the FEMA prescribed mitigation planning process to prepare the *Marion County, Multi-Jurisdictional Hazard Mitigation Plan* (the "HMP"), which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

WHEREAS, the City has identified hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the City of Silverton to the impacts of future disasters within the HMP; and

WHEREAS, these proposed projects and programs have been incorporated into the HMP that has been prepared and promulgated for consideration and implementation by the cities of Marion County; and

WHEREAS, the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the HMP and pre-approved it (dated, April 14, 2017) contingent upon its official adoption by the participating governments and entities; and

WHEREAS, the HMP is comprised of three volumes: Volume I -Basic Plan, Volume II – City Addenda, and Volume III – Appendixes; and

WHEREAS, the HMP is in an on-going cycle of development and revision to improve its effectiveness; and

WHEREAS, the City wishes to adopt the HMP and direct the City Manager (who serves as Silverton's Emergency Manager) to develop, approve, and implement the mitigation strategies and any administrative changes required by the HMP.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF SILVERTON AS FOLLOWS:

Section 1: That the City of Silverton hereby adopts the HMP as the City of Silverton's official updated hazard mitigation plan, superseding any and all previous hazard mitigation plans adopted by the City; and

Section 2: That the City of Silverton directs the City Manager to develop, approve and implement the mitigation strategies and any administrative changes required by the HMP; and

Section 3: That the City of Silverton will submit this Resolution to the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials to enable final approval of the *Marion County Multi-Jurisdictional Hazard Mitigation Plan*; and

Section 4: That this resolution is and shall be effective after its passage by the City Council.

Resolution adopted by the City Council of the City of Silverton, this 17th day of July, 2017.

_____
Mayor, City of Silverton
Kyle Palmer

ATTEST

_____
City Manager/Recorder, City of Silverton
Christy S. Wurster

Marion County Multi-Jurisdictional Hazard Mitigation Plan

Marion County and the Cities of: Aumsville, Aurora, Detroit, Gates, Idanha, Keizer, Silverton, Stayton, Turner and Woodburn

April 2017

Volume II: City Addenda

Prepared for:

Marion County Emergency Management

Prepared by:

University of Oregon
Community Service Center
Community Planning Workshop &
Oregon Partnership for Disaster Resilience

This Natural Hazard Mitigation Plan was prepared by:

With support from:

Planning grant funding provided by:

Federal Emergency Management Agency (FEMA)
Pre-Disaster Mitigation Program
Grant: EMS-2014-PC-0005
Sub-grant Application Reference: PDMC-PL-10-OR-2013-001, and

Additional Support Provided by:

SPECIAL THANKS & ACKNOWLEDGEMENTS

Marion County developed this Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) through a regional partnership funded by the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation (PDM) Competitive Grant Program: EMS-2014-PC-0011, Sub-grant Application Reference: PDMC-PL-10-OR-2014-002. This updated Hazard Mitigation Plan is a collaboration between Marion County and the Cities of Aumsville, Aurora, Detroit, Gates, Idanha, Keizer, Silverton, Stayton, Turner and Woodburn. Planning process, plan templates and plan development support provided by the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center.

Special thanks to Ed Flick, Marion County Emergency Manager for his enterprise-wide vision for resilience in Marion County; and to Kathleen Silva, Marion County Emergency Preparedness Coordinator for her leadership in convening the steering committee and lifeline sector advisory committees.

Marion County HMP Update Steering Committees

Marion County

Name	Position	Organization
Bill Lawyer	Director	City of Keizer Public Works
Boyd Keyser	Superintendent	North Marion School District
Brandon Reich	Senior Planner	Marion County Planning
Brent Stevenson	Manager	Santiam Water Control District
Caitlin Esping	AmeriCorps VISTA	Marion County Emergency Management
Dale Huitt	Deputy Sheriff	Marion County Sheriff
Danielle Gonzalez	Management Analyst	Marion County Community Services
David Sawyer	Administrator	City of Turner
Derrel Lockard	Superintendent	City of Aurora Public Works
Dianne Hunt	Director	City of Silverton Administrative Services
Don Charpillon		East Salem Suburban Neighborhood Association
Ed Flick	Emergency Manager	Marion County Emergency Management
Jason Horton	Communications Coordinator	City of Woodburn
Jeff Fossholm	Chief of Police	City of Silverton Police Department
Jennifer Warner	Technician	City of Keizer Public Works
Jim Ferraris	Police Chief	Woodburn Police Department
Kathleen Silva	Emergency Preparedness Coordinator	Marion County Emergency Management
Kelly Richardson	Manager/City Recorder	City of Aurora City Hall Administration
Kris Sallee	Councilor	City of Aurora City Council
Mathias Reyes	Project Manager	City of Keizer Public Works
Matt Knudsen	Environmental Specialist	Marion County Public Works
Michael Johnson	Chair	East Salem Suburban Neighborhood Association
Randy Scott	Director	City of Woodburn Public Works
Rick Sebens	Chief of Police	City of Stayton Police Department
Roger Stevenson	Emergency Manager	City of Salem Emergency Management

City of Aumsville

- Richard Schmitz, Chief of Police
- Steve Oslie, Public Works Director

City of Aurora

- Kris Sallee, City Council
- Kelly Richardson, City Recorder
- Derrel Lockard, Public Works Superintendent
- Boyd Keyser, Marion County School District

City of Detroit

- Christine Pavoni, City Recorder
- Robert Bruce, Certified Water Technician

City of Gates

- Jerry Marr, Mayor
- Traci Archer, Recorder
- Leeroy Davis

City of Idanha

- Karen Clark, Mayor
- Robert Bruce, Certified Water Technician

City of Keizer

- Bill Lawyer, Public Works Director
- Jennifer Warner, Public Works Technician
- Mathias Reyes, Drinking Water Technician
- Nate Brown, Community Development Director
- Elizabeth Sagmiller, Environmental Division Manager
- Sam Litke, Senior Planner
- Shane Witham, Associate Planner

City of Mill City

- David Kinney, Planning Advisor
- Stacie Cook, City Recorder

City of Silverton

- Dianne Hunt, Emergency Manager
- Jeff Fossholm, Police Chief

City of Stayton

- Dan Fleishman, Planning & Development Director
- Henry Porter, Mayor
- Rich Sebens, Emergency Manager
- Lance Ludwick, Public Works

City of Turner

- David Sawyer, City Administrator
- Garry Tiffin, Mayor
- Richard Bates
- Chuck Roberts
- Larry Lullay
- John Taylor

City of Woodburn

- Jason Horton, Public Information Officer
- Randy Scott, Public Works Director
- Jim Ferraris, Chief of Police
- Paul Iverson, Fire District Chief

Community Service Center Team

- Robert Parker, Director
- Josh Bruce, Director OPDR
- Michael Howard, Assistant Program Manager
- Aniko Drlik-Muehleck, Project Director
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Additional Thanks:

To the Department of Geology and Mineral Industries for assistance with hazard data; the Department of Land Conservation and Development staff in the hazards for flood data, mapping and process support; to the Oregon Military Department Office of Emergency Management for grant administration and process support.

Special thanks to all of the local Marion County partner agencies and representatives who participated in the lifeline sector analysis:

- Communications: Capital Community Television (CCTV), Amateur Radio Emergency Service (ARES), Marion Area Multi-Agency Emergency Telecommunications Dispatch Center (METCOM 911), Santiam Canyon Phone, Willamette Valley Communications Center (WVCC), Frontier, Verizon, Oregon Statewide Interoperability Coordinator (SWIC), Service Master of Salem, Pacific Gas and Electric Company (PGE).
- Energy: Pacific Gas and Electric.
- Transportation: City of Salem, City of Woodburn, Marion County Public Works, Marion County Sherriff's Office, ODOT, Salem Public Works, Salem-Keizer School District, Salem-Keizer Transit, Woodburn Transit Service.
- Water: City of Stayton, City of Salem, City of Keizer, City of Turner, Marion County, North Santiam Watershed Council.

About the Community Service Center

The Community Service Center (CSC), a research center affiliated with the Department of Planning, Public Policy, and Management at the University of Oregon, is an interdisciplinary organization that assists Oregon communities by providing planning and technical assistance

to help solve local issues and improve the quality of life for Oregon residents. The role of the CSC is to link the skills, expertise, and innovation of higher education with the transportation, economic development, and environmental needs of communities and regions in the State of Oregon, thereby providing service to Oregon and learning opportunities to the students involved.

About the Oregon Partnership for Disaster Resilience

The Oregon Partnership for Disaster Resilience (OPDR) is a coalition of public, private, and professional organizations working collectively toward the mission of creating a disaster-resilient and sustainable state. Developed and coordinated by the Community Service Center at the University of Oregon, the OPDR employs a service-learning model to increase community capacity and enhance disaster safety and resilience statewide.

Plan Template Disclaimer

This Hazard Mitigation Plan is based in part on a plan template developed by the Oregon Partnership for Disaster Resilience. The template is structured to address the requirements contained in 44 CFR 201.6; where language is applicable to communities throughout Oregon, OPDR encourages the use of standardized language. As part of this regional planning initiative, OPDR provided copies of the plan templates to communities for use in developing or updating their hazards mitigation plans. OPDR hereby authorizes the use of all content and language provided to Marion County in the plan template.

CITY OF SILVERTON ADDENDUM

Purpose

This document serves as the City of Silverton's Addendum to the Marion County Multi-Jurisdictional Hazards Mitigation Plan (MHMP, HMP). This addendum supplements information contained in Volume I (Basic Plan) of this HMP. The Basic Plan serves as the foundation for this jurisdiction's addendum. Volume III (Appendices) provides additional information (particularly regarding participation and mitigation strategy). This addendum meets the following requirements:

- Multi-jurisdictional **Plan Adoption** §201.6(c)(5),
- Multi-jurisdictional **Participation** §201.6(a)(3),
- Multi-jurisdictional **Mitigation Strategy** §201.6(c)(3)(iv), and
- Multi-Jurisdictional **Risk Assessment** §201.6(c)(2)(iii).

Plan Process, Participation, and Adoption

This section of the HMP addendum addresses 44 CFR 201.6(c)(5), *Plan Adoption*, and 44 CFR 201.6(a)(3), *Participation.*

In the summer and fall of 2016, the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center (CSC) partnered with the Oregon Military Department's Office of Emergency Management (OEM), and Marion County cities, including Silverton, to update their addendum to the Marion County HMP, which expired July 8, 2016. This project is funded through the Federal Emergency Management Agency's (FEMA) FY14 Pre-Disaster Mitigation Competitive Grant Program (PDMC-PL-10-OR-2014-002).

By developing this addendum to the Marion County HMP, locally adopting it, and having it approved by FEMA, the City of Silverton will regain eligibility for FEMA Hazard Mitigation, Pre-Disaster Mitigation, and Flood Mitigation Assistance grant program funds.

The Marion County HMP, and Silverton addendum, are the result of a collaborative effort between citizens, public agencies, non-profit organizations, the private sector, and regional organizations. A project steering committee guided the process of developing the plan. For more information on the composition of the steering committee see the *Acknowledgements*, *Plan Summary*, and *Plan Process* (Volume III, Appendix B).

The Silverton City Manager (who also serves as Silverton's Emergency Manager) is the designated local convener of this addendum. The Convener will take the lead in implementing, maintaining, and updating the addendum to the HMP in collaboration with Marion County Emergency Management.

Representatives from the City of Silverton steering committee met formally on one occasion: October 11, 2016 (see Appendix B for more information).

The city's addendum reflects decisions decided upon at the plan update meeting and during subsequent work and communication with OPDR.

The City of Silverton Steering Committee is comprised of representatives from the following departments:

- Convener, City Manager (Emergency Manager)
- Police Department
- Public Works Department
- Community Development Department
- Silverton Fire Department
- Silverton Local Business Representative (2)
- Community Nonprofit Representative

Silverton used multiple approaches to engage the public. First, the City established steering committee representatives from across the city. Next, the City actively participated in countywide community engagement activities described in Volume I, Section 4 and in Appendix B. City staff also presented the draft plan to the City Council during an open public council session. The Steering Committee was closely involved throughout the development of the plan and served as the local oversight body for the plan's development. In addition, community members outside of the steering committee were provided an opportunity for comment via the plan review process (see Appendix B for more information).

The Marion County HMP was approved by FEMA on [Month] [Day], 2017 and the Silverton addendum was adopted via resolution on [Month] [Day], 2017. This HMP is effective through [Month] [Day], 2022.

Mitigation Strategy

This section of the HMP addendum addresses 44 CFR 201.6(c)(3(iv), *Mitigation Strategy*.

During the 2016 Marion County and Silverton update process, OPDR and a representative from Marion County Emergency Management assisted the steering committee with developing mitigations that will meet Silverton's unique situation. The proposed actions were then re-reviewed by the steering committee to finalize. Silverton developed a list of priority actions (Appendix A-1), any actions that were not prioritized were placed in the Action Item Pool (Appendix A-2) and will be considered during the annual meetings. For a status update on each of Silverton's 2009 mitigation actions, see Appendix A-2.

Priority Actions

The City is listing a set of high priority actions in an effort to focus attention on an achievable set of high leverage activities over the next five-years. The City's priority actions are listed in Table SV-1 on the following page.

Action Item Pool

Table SV-2 on the following pages presents a pool of mitigation actions. This expanded list of actions is available for local consideration as resources, capacity, technical expertise and/or political will become available.

Table SV-1. Silverton Priority Action Items

Action Item ID	Hazard	Action Item	Coordinating Organization	Partner Organizations	Timeline
Priority Actions					
P-1	Flood	Update Silverton Flood Insurance Rate Maps (FIRMS).	Silverton Flood Plain Coordinator	Oregon Risk MAP; Silver Jackets; DOGAMI	Mid Term (3-5 years)
P-2	Dam Failure	Update the dam breech inundation scenario map.	Public works, Engineering	Marion Co.; UASCE	Short Term (1-2 years)
P-3	Dam Failure	Conduct seismic evaluation of Silver Creek Dam and Silverton water supply reservoir.	Public Works Director, Water Quality Supervisor	USACE	Short Term (1-2 years)
P-4	Dam Failure	Develop evacuation strategy for both local and regional dam failure scenarios.	Silverton Emergency Management	USACE	Mid Term (3-5 years)
P-5	Earthquake	Conduct seismic evaluation of West C and Main Street bridges over Silver Creek	Silverton Public Works	Marion Co., ODOT	Short Term (1-2 years)

Source: City of Silverton HMP Steering Committee, 2016.

Table SV-2. Silverton Action Item Pool

Action Item ID	Hazard	Action Item	Coordinating Organization	Partner Organizations	Timeline
Action Item Pool					
Multi-Hazard					
MH-1	Multi-Hazard	Assess options for a new City Hall building a structure that will withstand flood.	Administrative Services Director	City Council	Mid Term (3-5 years)
MH-2	Multi-Hazard	Create a Facilities Master Plan that assesses the need for new or updated facilities, and incorporates natural hazard vulnerabilities and mitigation measures for reducing vulnerability. Consider hazards in future facilities master plan updates.	Public Works	Administrative Services Director	Mid Term (3-5 years)
MH-3	Multi-Hazard	Create memoranda of understanding with fuel stations that allows emergency responders first access to fuel.	Public Works	Administrative Services Director	Short Term (1-2 years)
MH-4	Multi-Hazard	Create mutual aid agreement with sister cities.	Administrative Services Director	Emergency Management; Marion Co.	Short Term (1-2 years)
MH-5	Multi-Hazard	Educate businesses and governmental organizations about the importance of continuity of operations plans to make them more resilient to natural hazards.	Administrative Services Director	Chamber of Commerce	Ongoing
MH-6	Multi-Hazard	Participate in the COAD.	Emergency Management	Marion Co.; CERT	Ongoing
MH-7	Multi-Hazard	Improve coordination and evaluation of technical and engineering gaps in communications capabilities for natural hazards event response. (METCOM is currently doing an assessment.)	Emergency Management	City Administration; METCOM 911	Short Term (1-2 years)
MH-8	Multi-Hazard	Review, and if necessary, revise emergency management and business continuity plans, policies, and ordinances to ensure effective response, business continuity, and post-disaster recovery efforts. (Next update in 2018.)	Emergency Management	City Administration; City Council	Short Term (1-2 years)
MH-9	Multi-Hazard	Identify larger equipment that needs to be purchased that would support response during a disaster.	Emergency Management	City Administration; City Council	Short Term (1-2 years)
MH-10	Multi-Hazard	Secure memoranda of understanding for alternative sites that could be used for essential city functions if city buildings are not usable.	Administrative Services Director	City Council	Short Term (1-2 years)

Source: City of Silverton HMP Steering Committee, 2016.

Table SV-2. Silverton Action Item Pool (Continued)

Action Item ID	Hazard	Action Item	Coordinating Organization	Partner Organizations	Timeline
Action Item Pool					
Drought					
DR-1	Drought	Participate in implementing the Marion County Drought Contingency Plan	Water Quality Supervisor - Public Works	Marion County; North Santiam Drought Contingency Committee	Ongoing
Earthquake					
EQ-1	Earthquake	Seek voter approval for construction of City of Silverton Police Facility/Emergency Operations Center.	City Manager and Council	Fire Marshal; Police Chief	Mid Term (3-5 years)
EQ-2	Earthquake	Following seismic evaluation of the West C and Main Street over Silver Creek, seek funding to reinforce or replace as needed.	Public Works Director	Marion C.; ODOT	Mid Term (3-5 years)
EQ-3	Earthquake	Assess the seismic strength of Silverton's sewage treatment system and develop improvements accordingly as part of the sewage system's current update efforts.	Public Works Director, Water Quality Supervisor	City Council	Short Term (1-2 years)
EQ-4	Earthquake	Coordinate with Silverton School District to seek funding to assess and seismically retrofit school buildings that are vulnerable to collapse, including Mark Twain Middle School and the Robert Frost Elementary School.	Administrative Services Director	Silverton School District; Business Orgon IFA (seismic grant program); City Council	Mid Term (3-5 years)
EQ-5	Earthquake	Encourage reduction of nonstructural and structural earthquake hazards in homes, schools, businesses, and government offices through public education and the Map My Neighborhood program.	Administrative Services Director	Marion Co.	Short Term (1-2 years)
EQ-6	Earthquake	Update comprehensive plan to reflect the latest information on seismic hazards.	Community Development	Planning Commission; DLCD	Mid Term (3-5 years)
EQ-7	Earthquake	Evaluate the installation of automatic shut-off valves in all city facilities that use natural gas.	Engineering	Northwest Natural	Ongoing
EQ-8	Earthquake	Send city employees to the County's ATC 20 training.	Administrative Services Director	City/County Emergency Management	Ongoing
EQ-9	Earthquake/ Multi-Hazard	Encourage residents to prepare and maintain at minimum two-week survival kits.	Emergency Management	CERT	Ongoing

Source: City of Silverton HMP Steering Committee, 2016.

Table SV-2. Silverton Action Item Pool (Continued)

Action Item ID	Hazard	Action Item	Coordinating Organization	Partner Organizations	Timeline
Action Item Pool					
Flood					
FL-1	Flood	Educate residents and business owners near Silver Creeks about how to manage flood risks.	City floodplain coordinator	DLCD; FEMA; Risk MAP	Ongoing
FL-2	Flood	Mitigate flood issues at the wastewater treatment facility though riverbank reconstruction and other flood mitigation measures.	Public Works Director, Water Quality Supervisor	City Council	Short Term (1-2 years)
FL-3	Flood	Continue compliance with the National Flood Insurance Program (NFIP) through the enforcement of local floodplain ordinances.	City floodplain coordinator	Administrative Services Director	Ongoing
Landslide					
LS-1	Landslide	Based on the new LIDAR information obtained from DOGAMI, create a list of at-risk infrastructure and develop a public infrastructure landslide mitigation program to address the landslide hazard.	Public Works Director	DOGAM; Marion Co.	Short Term (1-2 years)
Wildfire					
WF-1	Wildfire	Implement the wildfire mitigation actions for Silverton found in the Marion County Community Wildfire Protection Plan when an updated plan becomes available.	Fire Marshall	Marion Co.	Ongoing
WF-2	Wildfire	Review Marion County's development codes together with the Marion County Planning Department to develop ways to mitigate wildfires near Silverton.	Fire Marshall	Community Development	Short Term (1-2 years)
Severe Weather					
SW-1	Severe Winter Storm	Continue to educate citizens about ways to weatherize their homes, as well as safe emergency heating equipment. [This could be improved]	Emergency Management	PGE	Ongoing
SW-2	Windstorm	Continue to support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms.	Community Development	PGE	Ongoing
SW-3	Windstorm	Regularly assess the health of trees in Coolidge McClaine Park to prevent damage to buildings and utilities from falling trees.	Parks and Recreation	Public Works Maintenance	Ongoing

Source: City of Silverton HMP Steering Committee, 2016.

Plan Implementation and Maintenance

The City Council will be responsible for adopting the City of Silverton addendum to the Marion County HMP. This addendum designates a convener and a coordinating body to oversee the development and implementation of action items. Because the city addendum is part of the county's multi-jurisdictional HMP, the City will look for opportunities to partner with the county. The City's steering committee will convene after re-adoption of the City of Silverton addendum on an annual schedule; the county meets on a semi-annual basis. The City of Silverton Convener will participate in the Marion County HMP meetings and will report on city specific activities as appropriate. The steering committee will be responsible for identifying new risk assessment data, reviewing status of mitigation actions, identifying new actions, and seeking funding to implement the City's mitigation strategy (actions). The convener will also remain active in the county's implementation and maintenance process (see Volume I, Section 4 for more information).

The City will utilize the same prioritization process as the county (See Volume I, Section 4: Plan Implementation and Maintenance and Volume IV, Appendix D: Economic Analysis of Hazard Mitigation Projects for more information).

Implementation through Existing Programs

Many of the Hazards Mitigation Plan's recommendations are consistent with the goals and objectives of the City's existing plans and policies. Where possible, the City of Silverton will implement the HMP's recommended actions through existing plans and policies. Plans and policies already in existence have support from local residents, businesses, and policy makers. Many land-use, comprehensive, and strategic plans get updated regularly, allowing them to adapt to changing conditions and needs. Implementing the HMP's action items through such plans and policies increases their likelihood of being supported and implemented.

Silverton's Comprehensive Plan was first acknowledged by the Oregon Land Conservation and Development Commission in 1987.[1] The City most recently completed updates to the plan, including updates to the Natural Hazards section, in December of 2013 and August of 2014. The Silverton Comprehensive plan indicates that the flood and earthquake hazards are the "two major types of natural hazards" that are estimated to affect the city. There is no mention in the natural hazards section of landslide or wildfire (listed under Statewide Planning Goal 7). The plan does contain a general goal to "Protect life and property from natural disasters and hazards." In addition, the plan contains three specific policies related to the flood hazard. There are no other hazard related policies listed. The City implements the plan through the Silverton Land Development Code, first adopted in 1998. The City has completed numerous updates since, with the most recent occurrence in November of 2016.

Silverton currently lists the following as attachments to the Comprehensive Plan:

- Master Sewer Plan Update 1992

[1] Note, LCDC acknowledged the Salem Area Comprehensive Plan in 1982. Silverton prepared and adopted the Silverton Comprehensive plan in January of 1987 with LCDC acknowledging it as an Amendment to the Salem Area Comprehensive Plan in February of 1987.

- Master Sewer Plan Update December 1993
- Dual Interest Area Agreement
- Master Sewer Plan Update January 30, 2003
- Parks & Recreation Master Plan dated January 2008
- City of Silverton Transportation System Plan (April 2009) Part 1
- City of Silverton Transportation System Plan (April 2009) Part 2

For more information, refer to http://www.Silverton.org/Adopted-Plans-Studies/.

Continued Public Participation

Keeping the public informed of the City's efforts to reduce the city's risk to future hazard events is important for successful plan implementation and maintenance. The City is committed to involving the public in the plan review and updated process. See Volume I, Section 4, for more information.

Plan Maintenance

The Marion County Multi-Jurisdictional Hazards Mitigation Plan and city addendum will be updated every five years in accordance with the update schedule outlined in the Disaster Mitigation Act of 2000. During the county plan update process, the City will also review and update its addendum. The convener will be responsible for convening the steering committee to address the questions outlined below.

- Are there new partners that should be brought to the table?
- Are there new local, regional, state, or federal policies influencing natural hazards that should be addressed?
- Has the community successfully implemented any mitigation activities since the plan was last updated?
- Have new issues or problems related to hazards been identified in the community?
- Are the actions still appropriate given current resources?
- Have there been any changes in development patterns that could influence the effects of hazards?
- Have there been any significant changes in the community's demographics that could influence the effects of hazards?
- Are there new studies or data available that would enhance the risk assessment?
- Has the community been affected by any disasters? Did the plan accurately address the impacts of this event?

These questions will help the steering committee determine what components of the mitigation plan need updating. The steering committee will be responsible for updating any deficiencies found in the plan.

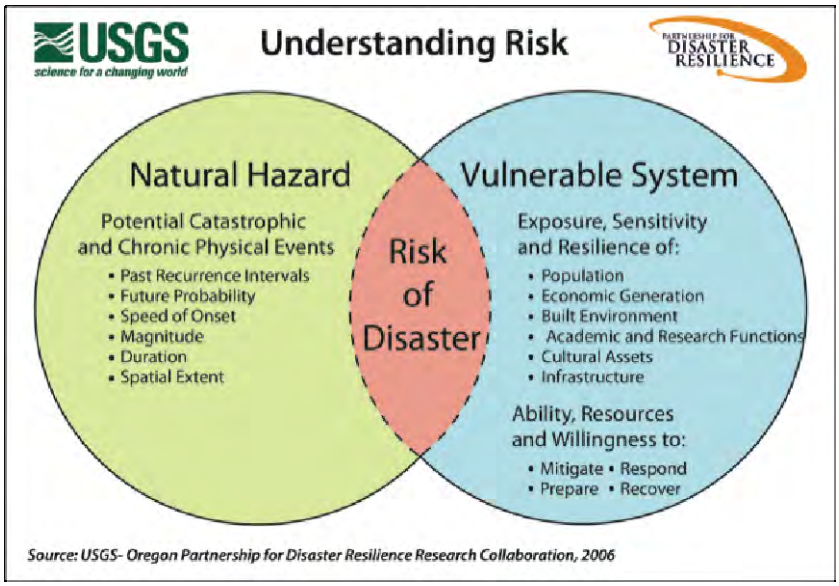
Risk Assessment

This section of the HMP addendum addresses 44 CFR 201.6(b)(2) - Risk Assessment. In addition, this chapter can serve as the factual basis for addressing Oregon Statewide Planning Goal 7 – Areas Subject to Natural Hazards. Assessing natural hazard risk has three phases:

- **Phase 1:** Identify hazards that can impact the jurisdiction. This includes an evaluation of potential hazard impacts – type, location, extent, etc.
- **Phase 2:** Identify important community assets and system vulnerabilities. Example vulnerabilities include people, businesses, homes, roads, historic places and drinking water sources.
- **Phase 3:** Evaluate the extent to which the identified hazards overlap with, or have an impact on, the important assets identified by the community.

The local level rationale for the identified mitigation strategies (action items) is presented herein, and within Section 2, *Risk Assessment*, and Appendix C, *Community Profile*. The risk assessment process is graphically depicted in Figure SV-1 below. Ultimately, the goal of hazard mitigation is to reduce the area of risk, where hazards overlap vulnerable systems.

Figure SV-1. Understanding Risk



Risk Assessment Approach

A risk assessment is intended to provide the, "factual basis for activities proposed in the strategy to reduce loses from identified hazards."[2] To complete the risk assessment, the HMP update team first updated the description, type, location and extent of each hazard. Next, the team updated the vulnerability information based on each hazard's potential impact on the community.

The Marion County Basic Plan (Volume I, Section II) Risk Assessment describes in detail the methods used to assess risk. In summary, Marion County has prepared a Threat Hazard Identification and Risk Assessment as a formal annex to the Marion County Emergency Operation Plan. The assessment uses a method developed by BOLD Planning.[3] This city

[2] 44 CFR 201.6(2)(i)

[3] BOLD Planning is a consulting firm specializing in the development of actionable emergency plans. For more information, visit: http://www.boldplanning.com/

addendum builds on the county level assessment to produce a similar assessment for the City of Silverton. The assessment specifically examines:

1. Probability (frequency) of event
2. Magnitude of event
3. Expected warning time before event
4. Expected duration of event

Refer to Page 2-4 of the Marion County Basic HMP for a description of the scoring values for each ranking category.

Hazard Analysis

The assessment identifies three levels of risk: High, Moderate and Low.

High - High probability of occurrence; at least 50 percent or more of population at risk from hazard; significant to catastrophic physical impacts to buildings and infrastructure; major loss or potential loss of functionality to all essential facilities (hospital, police, fire, EOC and shelters).

Moderate - Less than 50 percent of population at risk from hazard; moderate physical impacts to buildings and infrastructure; moderate potential for loss of functionality to essential facilities.

Low - Low probability of occurrence or low threat to population; minor physical impacts.

A summary of the risk assessment findings and rankings is presented below.

Table SV-3. Hazard and Vulnerability Assessment Summary

Hazard Profile Summary for Silverton Usinging Bold Planning Analysis Scoring							
Natural Hazard	Probability	Warning Time	Magnitude	Duration	CPRI	Local Planning Significance	County Planning Significance
Weight Factor	0.45	0.3	0.15	0.1			
Earthquake*	4	4	4	4	4.00	High	High
Severe Weather/Storm**	4	1	3	3	2.85	Moderate	High
Flood	3	2	3	4	2.80	Moderate	High
Drought	3	1	2	4	2.35	Moderate	High
Extreme Weather - High Temperature	3	1	2	4	2.35	Moderate	Moderate
Wildland Interface Fire	1	4	2	2	2.15	Moderate	Moderate
Dam or Levee Failure	1	2	4	4	2.05	Moderate	Moderate
Landslide	2	2	2	2	2.00	Moderate	High
Volcanic Eruption	1	1	1	4	1.30	Low	Low
*Note: Earthquake probability listed to match county level analysis. See below for more detailed probability assessment.							
**Note: Includes tornado hazard							

Source: BOLD Planning Risk Assessment Method; Analysis by UO Community Service Center.

Community Asset Identification

This section provides information on city-specific assets. For additional information on the characteristics of Silverton, in terms of geography, environment, population, demographics, employment and economics, as well as housing and transportation see Volume III, Appendix C, *Community Profile*. Many of these community characteristics can affect how hazards impact communities and how communities choose to plan for natural hazard mitigation. Considering the city-specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation.

Community Characteristics

The City of Silverton is located in Marion County, Oregon, straddling the banks of Silver Creek. The city is bisected by Highway 214 running roughly north-south and Highway 213 running roughly northeast-southwest. The city is approximately 15-miles west of the Salem-Keizer metro area. Silverton is located in Oregon's Willamette Valley, which experiences a moderate climate. In August, the average high temperature is 82 degrees and the average low temperature is 51 degrees. Wintertime temperatures in January range from an average high of 46 degrees to an average low of 33 degrees. The average annual precipitation is 39.9 inches.

The US Census lists Silverton's 2015 population at 9,590. This represents a 22.5% increase from 2000. For more demographic information, refer to Appendix C.

Economy

As with other early settlements throughout Marion County, proximity to water fueled early industry. Today, Silverton is home to the Oregon Garden, a private botanical wonderland attracting visitors from throughout the region. The city serves as a bedroom community to Salem and Portland. Its strong service economy caters to locals and tourists alike. Today, Silverton's primary employment sectors are health, manufacturing, retail, education and leisure, and hospitality. Median household income in Silverton is $53,929. For more economic information, refer to Appendix C.

Critical and Important Facilities

Critical and important facilities include the following:

<u>Transportation</u>

- Bridges:
    - Main St Bridge (ODOT bridge) – 12" waterline, forced sewer main, gas line, phone lines (this is the main switch into the Frontier station), fiber
    - C St Bridge (ODOT) – nothing attached
    - James Ave (City owned) – 8" waterline
- Highway 213 is the main east-west highway that connects Silverton with Salem to the west, and Oregon City to the northeast.
- Highway 214 is the major north-south highway that connects Silverton with Mount Angel and Woodburn to the north and Silver Creek Falls State Park and Highway 22 to the south.
- Highways 213 and 214 intersect in Silverton's commercial downtown.
  Note: Every route into town requires crossing a bridge – how will they get to the Aurora airport if bridges are out?
  Note: Silver Creek earthen dam and spillway – there isn't great access to the earthen dam (easy to get there from SW, but not NE)

<u>Energy</u>

- Portland General Electric is the only power supplier
  Note: Only one substation, and if it goes down, the entire town is affected.

Note: It is unlikely PGE will immediately provide assistance to Silverton in the event of a large-scale disaster.

- Fuel:
    - City Hall/Police – natural gas generator
    - Early warning dam building (monitoring building) – propane generator (150 gallons of propane stored, which will probably last 2 weeks)
    - City Shops – Generac propane generator (300 gallons of propane stored)
    - Edison pump station – propane generator
    - The City also has two very small emergency generators that run on gasoline

Water

- Drinking Water:
    - Abiqua Creek (primary) and Silver Creek are the main water supply sources for the city.
    - Abiqua diversion dam and 7-mile supply pipeline into town.

    Note: Pipeline was replaced in 1995, but there's a section that might fail in an earthquake. If water isn't available from Abiqua Creek (due to this issue), it would be possible to pull from Silver Creek.
    - Two water treatment plants on Ames Street, with a combined treatment capacity of 5.5 million gallons per day. (Need to find out about generators at each plant).
    - Three booster pump stations (Edison pump station, at the plant, Main St. pump station).
    - Three treated water storage tanks totaling 4.5 million gallons.
    - Reservoir (420 million gallons of storage) contained by the Silver Creek Dam (this is the earthen dam) southeast of the city.
- Wastewater:
    - Schemmel Lane Wastewater Treatment Plant treats the entire city.

Communication

- Communication towers:
    - Eastview Lane – tower with a repeater owned by Verizon, backup propane generator
    - Tower on top of City Hall
    - Tower on water plant on Ames
    - Tower off of Commerce owned by Wave Broadband
- Police, Fire, and Public Works can all communicate through radio.
  Note: All police cars connected to communication through cell towers – if cell towers aren't functional, police cars won't have computer access (just radio).
  Note: If Metcom goes down, 819 Railway Avenue becomes the dispatch center.

Emergency services

- Fire (Silverton Rural Fire District):
    - Station 1 (Main Station) (819 Rail Way NE, Silverton 97381)
    - Station 2 (13404 Riches Rd SE, Silverton 97381)
    - Station 3 (17447 Abiqua Rd NE, Silverton 97381)
    - Station 8 (490 3rd St., Scotts Mills 97375)
    - Station 9 (4724 Crooked Finger Rd NE, Scotts Mills 97375)

- Police:
    - Silverton Police Department (306 S. Water St.)
- Medical
    - Woodburn Ambulance substation (316 Phelps)
    - Silverton Hospital (342 Fairview St.) – 48-bed medical facility

Cultural/historical resources

- On the National Register of Historic Places:
    - Calvary Lutheran Church and Parsonage "White Steeple Church" (314 Jersey St.)
    - Downtown Silverton Commercial Historic District
    - Seven or eight homes listed around town
- Silverton Country Museum (428 South Water St.)
- Oregon Garden, containing the Gordon House, the only house designed by Frank Lloyd Wright in Oregon (879 W Main St.)

Functional and Access Needs (Vulnerable Populations)

- Silver Falls School District contains five public schools in the city. In 2010, 8.45% were in an ESL program.
- Assisted living facilities:
    - Davenport House/Davenport Place (930 Oak St.)
    - Wisdom Keepers Senior Care Home (171, 173 Steelhammer Rd.)
    - Marquis Silver Gardens (115 S. James St.)
    - Lone Oaks Care Homes (331 Lone Oaks Loop)
    - Silverton Senior Center (115 Westfield St.)
- Home for mentally challenged adults (1118 Florida Dr.)
- Silvertown 1 & 2 with senior and disabled adults (1 – 1000 N 2nd St.; 2 – 1115 mills St.)
- Silverton Mobile Estates (1307 S Water St.)
- Twilight Ct. (811 S Water) – low-income housing

Hazard Characteristics

Drought

The characteristics of drought in Silverton are the same for the county as a whole.

Table SV-4. Drought Summary

Hazard	Drought
Type	Climatic
Speed of Onset	Slow
Location	Varies, County Wide
Extent	Moderate to Severe Drought*
Prior Occurance	Three > 6 months duration since 1982
Probability	~9%

*Defined as between -2 and -4 on the National Resource Conservation Service (NRCS) Surface Water Supply Index (SWSI)

Sources: Oregon NHMP; NRCS; analysis by OPDR

The probability of drought in Silverton is likely, the same as for the county as a whole. Silverton relies on surface water and reservoir storage for its water supply source and historically drought has not been an issue. The City has a water curtailment plan that they have tested in the past even though conditions did not require it. Therefore, Silverton's vulnerability is low. Overall, the planning significance of drought in Silverton is moderate.

Volume I, Section 2, *Risk Assessment*, adequately describes the characteristics of drought hazards, as well as the location and extent of a potential event. Due to a cool, wet climate, past and present weather conditions have generally spared Marion County communities from the effects of drought. Governor Kate Brown declared a drought emergency for all of Marion County in September 2015.

As noted above, Silverton's primary water supply comes from Abiqua Creek via the Abiqua diversion dam and transmission pipeline. The transmission line, replaced in 1995, runs seven miles into town. The Silverton steering committee noted that there is a section that could fail in an earthquake. However, the City has a secondary source of water in Silver Creek. Silver Creek supplies 420 million gallons of raw water storage capacity provided by the Silverton Reservoir. Raw water from these two sources is treated for consumption at two treatment facilities located on Ames Street. The City is capable of treating up to 5.5. million gallons of water per day and has 4.5 million gallons of treated water storage capacity. The City maintains three (3) pump stations (Edison pump station, Main Street pump station, and the treatment plant pump).

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Earthquake

The characteristics of a crustal earthquake are similar to the county as a whole.

Table SV-5. Earthquake Summary Crustal

Hazard	Earthquake - Crustal
Type	Geologic
Location	Multiple active faults; Willamette Valley
Speed of Onset	Rapid
Extent	Very Strong to Severe shaking ~ 500 yrs*
Prior Occurance	One over Magnitude 5 last 100 yrs**
Probability	Approximately 1% annual

*DOGAMI HazVu; ** PNSN - 1993 Scotts Mills just north of Marion County

Sources: DOGAMI - Oregon HazVu; Oregon NHMP; Pacific Northwest Seismic Network

The characteristics of a Cascadia subduction zone earthquake are the same as the county.

Table SV-6. Earthquake Summary Subduction

Hazard	Earthquake - Subduction
Type	Geologic
Location	Primarily west of the Cascades; CA - BC
Speed of Onset	Rapid
Extent	Catastrophic
Prior Occurance	One over Magnitude 9 last 500 yrs
Probability	Magnitude 9+ is 7% - 12% over 50 yrs**

*DOGAMI HazVu; **Oregon Natural Hazard Mitigation Plan, anlysis by Oregon Department of Geology and Mineral Industries.

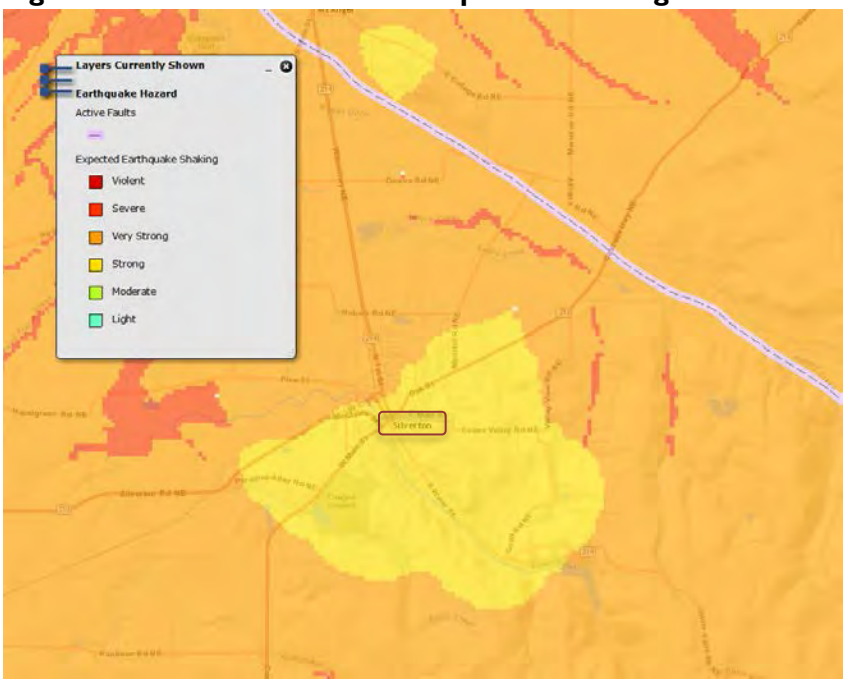
Sources: DOGAMI - Oregon HazVu; Oregon NHMP; Pacific Northwest Seismic Network

Silverton's probability for a Crustal Earthquake event is "possible" and their vulnerability to a Crustal Earthquake event is "limited". The county steering committee determined that the probability for a Cascadia Subduction Zone (CSZ) Earthquake event is "highly likely" and that the vulnerability to a Cascadia Earthquake event is "catastrophic". This hazard was not rated as distinct CSZ and crustal events in the previous HMP. An active earthquake fault located north of the city exists within two miles of the Silverton City Limit. Other active faults exist within five-miles to the northeast and southwest. The 1993 Scott Mills quake caused $28 million in damages to cities throughout Marion County. No damaging earthquake events occurred during the previous five years.

Volume I, Section 2, *Risk Assessment*, adequately describes the characteristics of earthquake hazards, history, as well as the location and extent of a potential event. Generally, an event that affects the county is likely to affect Silverton as well. Previous occurrences are well-documented within the county's plan, and the community impacts described by the county would generally be the same for Silverton as well.

Earthquake-induced damages are difficult to predict, and depend on the size, type, and location of the earthquake, as well as site-specific building and soil characteristics. Presently, it is not possible to accurately forecast the location or size of earthquakes, but it is possible to predict the behavior of soil at any particular site. In many major earthquakes, damages have primarily been caused by the behavior of the soil. Figure SV-2 shows that ground shaking in Silverton for both crustal and subduction earthquakes are expected to be strong and very strong, with some outlying areas experiencing severe shaking.

Figure SV-2. Active Faults and Expected Shaking



Source: Oregon HazVu: Statewide Geohazards Viewer (DOGAMI)

The Silverton steering committee identified earthquake damage to bridges and nearby dams as a primary concern. Transportation isolation and inundation due to dam failure could both have significant impacts on the city. The City's priority actions reflect these concerns.

In 2007, the Department of Geology and Mineral Industries (DOGAMI) conducted a seismic needs assessment for public school buildings, acute inpatient care facilities, fire stations, police stations, sheriffs' offices, and other law enforcement agency buildings. Buildings were ranked for the "probability of collapse" due to the maximum possible earthquake for any given area. Within the city of Silverton, the following buildings were given a "moderate" or "high" probability of collapse:

- Mark Twain Middle School: *high (> 10%)*
- Robert Frost Elementary School: *high (> 10%)*
- Eugene Field Elementary School: *high (> 10%)*
- Silverton High School (Schlador St. Campus): *very high (100%)*

The Silver Falls School District has completed several important school seismic mitigation projects since the last HMP. As a significant mitigation success, Silverton completed construction of the second phase of the Pine Street High School Campus in 2009. All high school students are now enrolled at the new high school. Further, in 2016, the district completed conversion of the Schlador Street Campus for use as a new middle school. The original multi-story (1938) portions of the old high school building remain intact, however they are no longer used for student instruction. Completion of the Silverton Middle School project resulted in the following school changes:

- Robert Frost School (currently grades 4,5,6) now houses grades 3, 4 and 5
- Mark Twain School (currently grades 7,8) now houses grades K, 1 and 2

- Eugene Field Elementary School has been liquidated by the district

Silverton is also in the process of seeking voter approval to construct a new police and emergency operations center.

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Flood

Table SV-7. Flood Summary

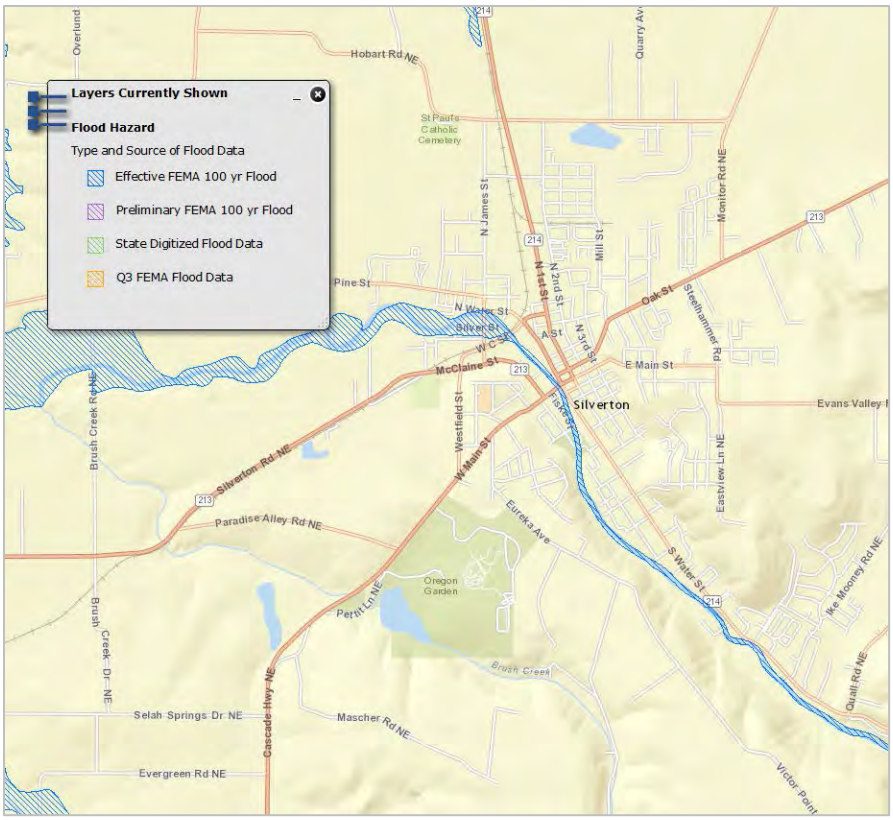
Hazard	Flood
Type	Climatic
Speed of Onset	Slow to moderate
Location	Mapped flood zones, floodplain
Extent	Moderate to severe
Prior Occurance	Four significant events since 1964
Probability	1% annual within SFHA

Sources: DOGAMI - Oregon HazVu; Oregon NHMP

Volume I, Section 2, Risk Assessment, describes the causes and characteristics of flooding hazards within the region. The city's probability for riverine flood is likely and their vulnerability to flood is critical. In January of 2013 the City activated the Emergency Operations Center in response flood impacts. During the event the City activated its dam early warning system and monitored property impacts along Silver Creek. The adult care center on James Avenue sustained flooding impacts. Additionally, a tree the fell into the creek resulted in water backing up behind with localized flooding impacts as a result.

Portions of Silverton have areas of flood plains (special flood hazard areas). These include areas along the Silver Creek. However, flood impacts are largely limited to the within the banks or Silver Creek where it passes through the city.

Figure SV-3. Special Flood Hazard Area



Source: [Oregon HazVu: Statewide Geohazards Viewer (DOGAMI)]

National Flood Insurance Program (NFIP)

FEMA modernized the Silverton Flood Insurance Rate Maps (FIRMs) in January of 2000. Table SV-1 shows that as of October 2016, Silverton has 81 National Flood Insurance Program (NFIP) policies in force. Of those, 37 are for properties that were developed before development of the initial FIRM. The last Community Assistance Visit (CAV) for Silverton was on March 31, 1995. Silverton is not a member of the Community Rating System (CRS). The table shows that roughly two-thirds of the flood insurance policies are for single-family residential homes with the bulk of the other one-third being other residential. There have been 12 paid flood claims in Silverton totaling $70,080.

The Community Repetitive Loss record for Silverton identifies no Repetitive Loss Properties[4] and no Severe Repetitive Loss Properties[5].

[4] A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than $1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978. A RL property may or may not be currently insured by the NFIP.

[5] A Severe Repetitive Loss (SRL) property is a single family property (consisting of 1 to 4 residences) that is covered under flood insurance by the NFIP and has incurred flood-related damage for which 4 or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding $5,000 and with cumulative amount of such claims payments exceeding

Table SV-8. Flood Insurance Detail

Jurisdiction	Effective FIRM and FIS	Initial FIRM Date	Total Policies	Pre-FIRM Policies	Policies by Building Type: Single Family	2 to 4 Family	Other Residential	Non-Residential	Minus Rated A Zone	Minus Rated V Zone
Marion County	-	-	2,067	1,239	1,614	115	105	232	97	0
Silverton	1/19/2000	3/1/1979	81	37	51	4	21	5	22	0

Jurisdiction	Insurance in Force	Total Paid Claims	Pre-FIRM Claims Paid	Substantial Damage Claims	Total Paid Amount	Repetitive Loss Structures	Severe Repetitive Loss	CRS Class Rating	Last Community Assistance
Marion County	$ 514,268,700	298	226	16	$ 5,732,543	11	2	-	-
Silverton	$ 19,421,300	12	8	0	$ 70,080	0	0	N/A	3/31/1995

Source: Information compiled by Department of Land Conservation and Development, October, 2016.

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Landslide

Table SV-9. Landslide Summary

Hazard	Landslide
Type	Climatic/Geologic
Speed of Onset	Slow to rapid
Location	Silver Creek Reservoir; west side Silver Creek south of Main St.; east of Water St. south of Main St.
Extent	Moderate to Very High
Prior Occurance	Evidence of old landslides; none in recent history
Probability	Possible

Sources: DOGAMI - Oregon HazVu; Oregon NHMP

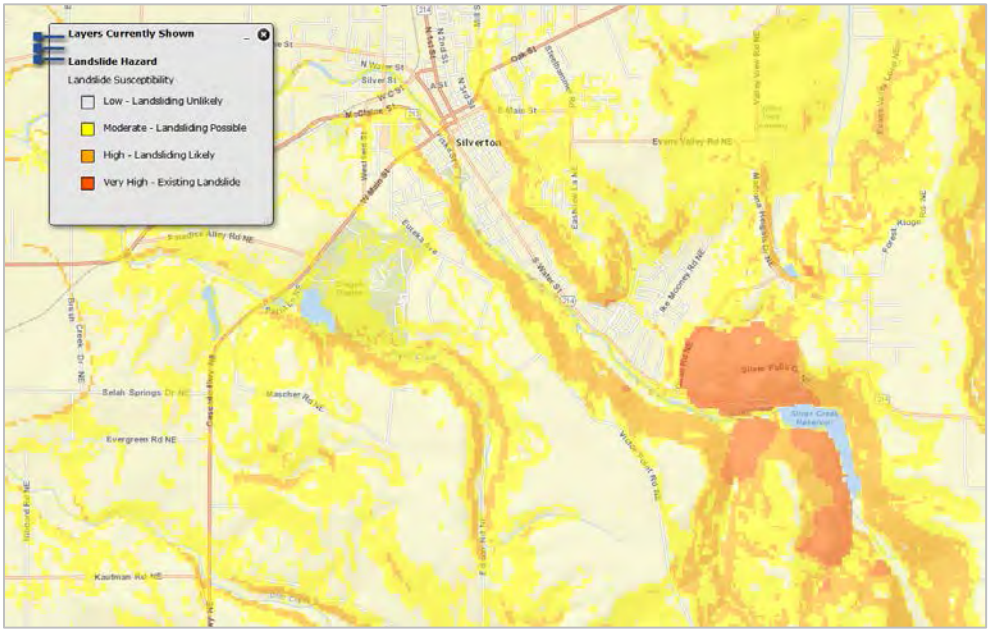
Volume I, Section 2, *Risk Assessment*, adequately describes the causes and characteristics of landslides, and appropriately identifies previous landslide occurrences within the region. Silverton has a relatively flat topography, except for the area along Silver Creek southeast of Main Street and near the Silver Creek Dam. Silverton's probability for landslide is possible and their vulnerability to landslide is limited. Figure SV-4 shows the inventory of known historical landslides. Figure SV-5 shows the susceptibility and exposure to future landslides in Silverton.

$20,000; or for which at least 2 separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Figure SV-4. Landslide Inventory

Source: [Oregon HazVu: Statewide Geohazards Viewer (DOGAMI)]

Figure SV-5. Landslide Susceptibility Exposure



Source: [Oregon HazVu: Statewide Geohazards Viewer (DOGAMI)]

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Volcano

Table SV-10. Volcano Summary

Hazard	Volcano
Type	Geologic
Speed of Onset	Slow to rapid
Location	Cascade Mountains
Extent	Minor
Prior Occurance	One significant event since 1916 (Mount St. Helens)
Probability	<1% annual

Sources: DOGAMI - Oregon HazVu; Oregon NHMP

Volume I, Section 2, *Risk Assessment*, adequately describes Silverton risk to volcanic events. The steering committee determined that the city's probability for volcanic event is unlikely and their vulnerability to volcano is negligible.

The causes and characteristics of a volcanic event are appropriately described within the county's plan, as well as the location and extent of potential hazards. Previous occurrences are well-documented within the county's plan. Silverton is very unlikely to experience anything more than volcanic ash during a volcanic event. When Mt. Saint Helens erupted in 1980, the city was not impacted.

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Severe Weather

Table SV-11. Severe Weather Summary

Hazard	Severe Weather/Storm
Type	Climatic
Speed of Onset	Slow to moderate
Location	Countywide
Extent	Minor to severe
Prior Occurance	Minor events occur annually; ~30 moderate to severe events over the past 130 years
Probability	100% for minor events, 23% for moderate to severe events

Sources: Marion County HMP

Windstorm

Volume I, Section 2, *Risk Assessment*, adequately describes the causes and characteristics of windstorms, as well as the location and extent of windstorm hazards. The city's probability for windstorm is highly likely and their vulnerability to windstorm is critical.

Significant wind events occur in Silverton each year. Damaging wind events are only slightly less common; once or twice per year the city will experience a windstorm event that will interrupt services, down trees, and cause power outages.

Because windstorms typically occur during winter months, they are sometimes accompanied by ice, freezing rain, flooding, and very rarely, snow.

Winter Storm (Snow/Ice)

Volume I, Section 2, *Risk Assessment*, adequately describes the causes and characteristics of winter storms, as well as the location and extent of winter storm hazards. The City's probability for winter storms is highly likely and that their vulnerability to winter storms is critical.

Severe winter storms can consist of rain, freezing rain, ice, snow, cold temperatures, and wind. They originate from troughs of low pressure offshore that ride along the jet stream during fall, winter, and early spring months. Severe winter storms affecting the city typically originate in the Gulf of Alaska or in the central Pacific Ocean. These storms are most common from November through March.

Major winter storms can and have occurred in the Silverton area, and while they typically do not cause significant damage, they are frequent and have the potential to impact economic activity. The most recent winter storms (December 2016 – January 207) included snow and ice, transportation and power interruptions, and government office and school closures. A disaster declaration is currently pending.

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

Wildfire

Table SV-12. Wildfire Summary

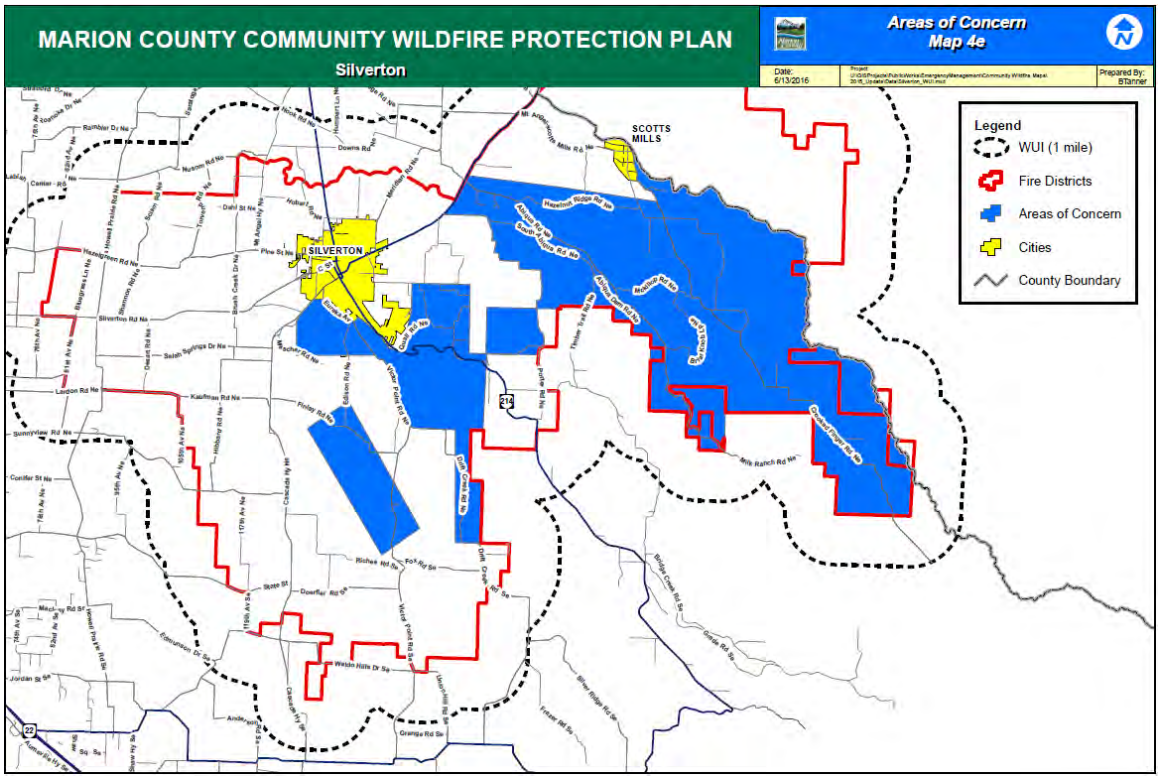
Hazard	Wildfire
Type	Climatic, Human Caused
Speed of Onset	Moderate to rapid
Location	Outside city limit
Extent	Minor to moderate
Prior Occurance	No history inside city limit
Probability	<1% annual

Sources: Marion County HMP

Volume I, Section 2, *Risk Assessment*, adequately describes the causes and characteristics of wildfires, as well as the county and city's history of wildfire events. The city's probability for wildfire is unlikely and the vulnerability to wildfire is limited. Silverton is located on the far western side of Marion County, surrounded on all sides by open farmland, waterways, or urban development. There are no forests within the city limits, and the closest forested area is Silverton Rapids Park, located half a mile west of the city. Due to its location, Silverton faces minimal risk of experiencing wildfires. There is no history of wildfire events in Silverton.

The County updated the Community Wildfire Protection Plan (CWPP) in 2016 and portions of Silverton are listed as having wildland urban interface (WUI) with areas of concern. Figure SV-6 depicts the areas near Silverton that the CWPP identifies as areas of concern. These areas should be targeted for fire suppression activities.

Figure SV-6. Areas of concern near Silverton.



Source: Marion County Community Wildfire Protection Plan (2016).

Please review the Risk Assessment (Volume I, Section 2) for additional information on this hazard.

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 8.3	**Topic:** Resolution No. 17-30 – A Resolution submitting a five-year local tax for Swimming Pool operation and maintenance
	Report No.: 17-72	
	Agenda Type: **DISCUSSION/ACTION**	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Heather Martin	**Reviewed By:** Christian Saxe	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Staff recommends a motion to approve Resolution No. 17-30 to place the renewal of a five-year local option tax on the November 2017 ballot to be used on swimming pool operation and maintenance costs.

BACKGROUND:
In 2002 voters approved a ten-year general obligation bond for major pool renovations and improvements. The voters approved a five-year local option levy for swimming pool operation and maintenance which went into effect in 2013. That levy was $275,000 annually for five years for a total of $1,375,000 but is set to expire in June 2018. The Pool Task Force has recommended a renewal of the current levy for another five years as the City's General Fund is still not able to support the entire cost for year-round operation and maintenance of the pool.

As such, staff has worked with the City Attorney to draft a resolution that will submit to the voters for the November 2017 election a renewal of the five-year option tax at the same rate, $275,000 annually. This levy would result in an estimated annual collection of $.3659 per $1,000 of assessed value. A home with an assessed value of $200,000 would pay approximately $73.18 per year for this levy.

BUDGET IMPACT: **FY(s):** 2017-18 **Funding Source:** Pool Operating Levy

Attachments:
1. Resolution No. 17-30

CITY OF SILVERTON
RESOLUTION
17-30

A RESOLUTION OF THE SILVERTON CITY COUNCIL SUBMITTING TO THE VOTERS OF SILVERTON A FIVE-YEAR LOCAL OPTION TAX RENEWAL TO PROVIDE SWIMMING POOL OPERATIONS & MAINTENANCE COSTS

WHEREAS, the City's existing swimming pool is in need of ongoing maintenance and system improvements in order for the City to continue operating the pool year-round; and

WHEREAS, the City previously placed on the ballot in 2013 a five-year local option tax to provide swimming pool operations and maintenance which was approved; and

WHEREAS, the City's five-year local option tax expires on June 30, 2018; and

WHEREAS, current and projected budgets do not provide the resources for the City to continue operating the swimming pool year-round without additional funding; and

WHEREAS, the City Council has determined that another five-year local option tax levy should be submitted to the voters which will provide for the continued operations and maintenance of the City's swimming pool, at the same value of the current tax of $275,000 annually and a five-year total of $1,375,000, with no tax increase; and

WHEREAS, this proposed tax measure must be submitted to the voters of the City for their approval.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SILVERTON, AS FOLLOWS:

Section 1: An election is hereby called for the City of Silverton, Marion County, Oregon for the purpose of submitting to the legal voters of the City the following question;

QUESTION: Shall Silverton impose a tax of $275,000 annually for five years for swimming pool operations and maintenance beginning in 2018-2019? This measure renews current local option taxes.

Section 2: Tuesday, November 7, 2017 is hereby designated the date for holding the election for the purpose of voting on the measure as stated in Section 1, which election will be by mail-in ballot in the City of Silverton, Marion County, Oregon.

Section 3: The precincts for said election shall be and constitute all of the territory included within the corporate limits of the City of Silverton.

Section 4: The following ballot title and explanatory statement are hereby certified and adopted by the City Council:

Ballot Title:

CAPTION: Five-year Operating Levy for Swimming Pool Operations and Maintenance

QUESTION: Shall Silverton impose a tax of $275,000 annually for five years for swimming pool operations and maintenance beginning in 2018-2019? This measure renews current local option taxes.

SUMMARY: The City maintains and operates a year-round swimming pool that requires ongoing maintenance for continued operation. Current tax revenues are not adequate to fund the required maintenance and operating costs. The operating and maintenance levy would collect taxes over five years totaling an estimated $1,375,000. The amount would be levied annually in equal amounts of $275,000. The taxes would be used to fund necessary major maintenance of the pool and to fund continued year-round operation.

Explanatory Statement:

The City of Silverton maintains and operates a year-round swimming pool that requires ongoing maintenance for continued operation. Current tax revenues are not adequate to fund the required maintenance and operating costs. The operating and maintenance levy would collect taxes over five years totaling $1,375,000, which would be imposed annually in equal amounts of $275,000. The taxes would be used to fund necessary maintenance of the pool and fund continued operation.

In 2003 the voters of Silverton authorized a 10 year bond for $1.2 million to complete improvements to the pool, which was originally constructed in 1939. That bond resulted in a new bathhouse, improvements to the pool itself, and the installation of a zero-depth entry on one end. In 2013 the voters of Silverton authorized a five year levy for $1,375,000 for the operation and maintenance of the pool which was a levy of $0.45 per $1,000 of assessed value. That 2013 measure expires June 30, 2018.

This levy would allow for the continued operation and maintenance of the Silverton pool, currently under contract with the Silver Falls Family YMCA. Among other projects, the levy would fund a replacement of the removable cover and additional work recommended by the 2017 Pool Facility Assessment.

The levy would maintain the year-round use of the Silverton Pool for the following (but not limited to):

- Recreation for all Silverton residents and others in the area
- Training facility for the Silverton High School Swim Team
- Training and competition facility for the year-round community swim program

- Swimming Lessons for area youth
- Exercise classes for all ages
- Lap swim use for all ages
- Handicap Access
- Physical Rehabilitation

How would this operating levy affect property taxes if passed?
The levy would result in an estimated annual collection of $0.3659 per $1,000 of assessed value, or approximately $73.18 a year for a home with an assessed value of $200,000, the same as the current levy. The estimated tax cost for this measure is an ESTIMATE ONLY based on the best information available from the county assessor at the time of estimate and may reflect the impact of early payment discounts, compression, and the collection rate.

What if the Measure fails?
If the measure fails, the City will be unable to continue year-round operations of the pool. At this time, there are no identified alternatives to fund operation of the pool beyond June of 2018.

Section 5: The Mayor or designee is authorized to sign and the City Manager/Recorder is authorized to submit the explanatory statement for publication in the Marion County voter's pamphlet on behalf of the City.

Section 6: The City Manager/Recorder shall take all steps on behalf of the City as necessary to carry out the intent and purposes of this resolution in compliance with state law, including but not limited to, providing notice of and publishing the ballot title, editing the ballot title and explanatory statement as required by law, and forwarding the measure to the County Elections Official for placement on the November 7, 2017 ballot.

Section 7: That this resolution is and shall be effective after its passage by the City Council.

Resolution adopted by the City Council of the City of Silverton, this 17th day of July, 2017.

_____
Mayor, City of Silverton
Kyle Palmer

ATTEST

_____
City Manager/Recorder, City of Silverton
Christy Wurster

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 8.4	**Topic:** Discussion and approval of a Purchase and Sale Agreement with the Silver Falls School District for property at 410 N. Water Street, Silverton, OR (Eugene Field) for the construction of a new Police Facility and Civic Center
	Report No.: 17-73	
	Agenda Type: DISCUSSION/ACTION	
	Meeting Date: July 17, 2017	**Attachments:** ☒ **Yes** ☐ **No**
Prepared By: Christy S. Wurster	**Reviewed By:** Christy S. Wurster	**Approved By:** Christy S. Wurster

RECOMMENDED MOTION:
Motion to approve the Purchase and Sale Agreement with the Silver Falls School District for the acquisition of real property located at 410 North Water Street which includes five parcels comprised of approximately 3.46 acres, and ratifying the City Manager's signature on the contract and issuance of $25,000 earnest money.

BACKGROUND:
The City Manager entered into the attached Purchase and Sale Agreement (PSA) dated July 5, 2017 with the Silver Falls School District for acquisition of the property at 410 North Water Street which includes a total of five parcels and comprises approximately 3.46 acres for the future construction of a new Police Facility and Civic Center. On Friday, July 7, 2017, the City of Silverton received notice that the buyer in first position for purchase of the property terminated their contract and the City of Silverton was advanced to first position for the purchase of the property. The attached PSA outlines the details of the purchase with a total purchase price of $1,000,000.

During the course of the due diligence period, the City will conduct an appraisal of the property, conduct environmental site assessments, conduct a hazardous building material survey, and perform other due diligence deemed necessary to move forward with the purchase. The property is scheduled to close following the City's acceptance of any findings identified during a 60-day due diligence period.

The City's fiscal year 2017-2018 budget contains budget appropriation authority for the acquisition and due diligence costs associated with the purchase.

BUDGET IMPACT: **FY(s):** 2017-2018 **Funding Source:** Civic Building Project Fund

Attachments:
1. Purchase and Sale Agreement
2. Comments received

PURCHASE AND SALE AGREEMENT

DATED: JULY 5, 2017

(the last date signed by both parties below)

BETWEEN: Silver Falls School District ("Seller")

AND: City of Silverton, an Oregon municipal corporation ("Buyer")

RECITALS

A. Seller is owner of approximately 3.46 acres of certain real property together with all the improvements thereon and all rights appurtenant thereto (including but not limited to access rights, timber rights, water rights, grazing rights, development rights and mineral rights) located at 410 North Water Street, Silverton, Marion County, Oregon 97381 commonly referred to as Marion County Assessor's Tax Numbers 061W35BC08100, 061W35BC08000, 061W34AD00500, 061W34AD00600, 061W34AD00700 (the "Property"), which property is more particularly described on the attached Exhibit A.

B. Buyer desires to purchase the Property from Seller, and Seller desires to sell the Property to Buyer, for the price and on the terms and conditions described in this Purchase and Sale Agreement (this "Agreement").

C. At Closing (hereinafter defined), upon payment of the full Purchase Price to Seller by Buyer, Seller will convey full legal title to the Property to Buyer.

TERMS

1. **Purchase and Sale.** Seller agrees to sell and convey to Buyer, and Buyer agrees to purchase from Seller, the Property upon the terms and conditions set forth below in this Agreement.

1.1 Second Position. This Agreement is in second position to an offer from another party that is currently under contract. This Agreement will only become effective if the first position offer terminates at which time the Seller will provide written notice to the Buyer that Buyer has moved into first position (First Position Notice). The date the Buyer receives the First Position Notice is the Effective Date of this Agreement.

2. **Purchase Price.** Subject to Section 6.1.1 below, the Purchase Price for the Property is ONE MILLION DOLLARS ($1,000,000.00), payable as follows:

2.1 Earnest Money Deposit. Within ten (10) days after the Effective Date, Buyer shall deposit into escrow with AmeriTitle, (the "Title Company") located at 215 E. Main Street, Silverton, Oregon 97381 the sum of TWENTY-FIVE THOUSAND DOLLARS ($25,000.00)

(the "Earnest Money") in cash. At Closing, the Earnest Money will be credited toward payment of the Purchase Price.

2.2 Balance of Purchase Price. Buyer shall deposit into escrow with the Title Company the balance of the Purchase Price on or before the Closing Date. At Closing, the Earnest Money and the balance of the Purchase Price shall be paid to Seller.

3. **Closing Date.** This transaction shall close approximately thirty (30) but no more than forty-five (45) days after the Due Diligence Period (defined below) ends unless otherwise extended as set forth herein (the "Closing Date" or "Closing"). Closing will occur at the office of Title Company..

4. **Buyer's Title Review.**

4.1 Title Report; Unacceptable Exceptions. Within ten (10) days after the Effective Date, Buyer shall order from the Title Company a preliminary title report on the Property, along with legible copies of all plats and exceptions documents referenced in such report (the "Title Report"). Buyer will have twenty (20) days following Buyer's receipt of the Title Report to review the Title Report and give Seller written notice of the exceptions listed in the Title Report that are unacceptable to Buyer (the "Unacceptable Exceptions"). Mortgages, delinquent taxes, or other financial obligations secured by the Property are automatically deemed Unacceptable Exceptions. If Buyer notifies Seller of its objection to any Unacceptable Exceptions, Seller will thereafter have fifteen (15) days to provide Buyer written notice stating whether Seller will (at Seller's sole cost and expense) cause such exceptions to be removed from the Title Policy issued to Buyer at Closing. If Seller refuses to remove any of the Unacceptable Exceptions and Buyer is not then satisfied with the condition of title, Buyer may elect to terminate this Agreement, in which event the Earnest Money shall be returned to Buyer.

4.2 Failure to Deliver Clean Title at Closing. If Seller fails to eliminate any Unacceptable Exception by the Closing Date, then Buyer may, without limiting any of its otherwise available remedies, elect to either (a) accept title to the Property subject to such exceptions, (b) refuse to accept the Property and terminate this Agreement, in which case the Earnest Money shall be refunded to Buyer, or (c) extend the Closing Date for a period of thirty (30) days to provide Seller with additional time to remove such exceptions. If Buyer elects option (c) and at the end of the 30-day period such exceptions have not been removed, Buyer may then elect to proceed in accordance with either option (a) or (b) described above. To the extent that an Unacceptable Exception is a monetary lien or financial obligation secured by the Property, the Title Company is hereby directed to pay off such lien or obligation to the extent that it can be satisfied by application of all or a portion of the Purchase Price delivered into escrow by Buyer at Closing.

4.3 Permitted Exceptions. All exceptions other than the Unacceptable Exceptions objected to by Buyer shall be deemed acceptable to Buyer (the "Permitted Exceptions"); provided, however, that in no event will mortgages, delinquent taxes, or other financial obligations secured by the Property be deemed Permitted Exceptions. Should the Title Company inform Buyer of any new title exceptions not appearing on the initial Title Report, such new

exceptions shall be deemed Unacceptable Exceptions, unless specifically accepted in writing by Buyer.

5. Buyer's Due Diligence and Inspections.

5.1 Due Diligence Period. The Buyer will have a period of sixty (60) days from the Effective Date (the "Due Diligence Period") during which period the Buyer may conduct investigations detailed in this Section 5 to determine if the Property is satisfactory to the Buyer. On or before the expiration of the Due Diligence Period, the Buyer will provide a Suitability Notice in writing to the Seller of its intent to proceed with its acquisition of the Property. If Buyer is not satisfied with the Property, the Buyer will have the ability to extend in writing the Due Diligence Period by two additional periods of thirty (30) days each or terminate the Agreement and receive a refund of the Earnest Money.

5.2 Seller's Delivery of Documents. Within twenty (20) days after the Effective Date, Seller shall deliver to Buyer all information and documentation excluding any appraisal, third party offer to purchase, third party contract or document otherwise protected from disclosure such as attorney-client or executive session material in Seller's possession or control pertaining to the Property. If Seller is aware of the existence of any material information and documentation pertaining to the Property that are not in Seller's possession or control, Seller shall notify Buyer of the existence of such information within fifteen (15) days after the Effective Date or two (2) business days after learning of the such information. Should Seller fail to timely provide Buyer with the Due Diligence Documents, Buyer may, at Buyer's sole discretion, extend the Closing Date for a period not to exceed twenty (20) days so that Buyer may have adequate time to review such additional documentation. Nothing in this paragraph shall require Seller to obtain data, studies, analyses, reports, surveys, or other documents mentioned herein that are not already in existence at the time of this Agreement or within Seller's reasonable ability to obtain at no expense to Seller.

5.3 Property and Environmental Inspections. During the Due Diligence Period, Buyer and its agents, including but not limited to consultants, surveyors, engineers, home inspectors, appraisers, and other professionals hired by Buyer, at Buyer's sole cost and expense, shall have the right to access the Property to conduct environmental studies (including but not limited to Phase I and Phase II Environmental Site Assessments), structural inspections, sewer and septic system sampling, hazardous building materials surveys (including but not limited to asbestos and lead testing), and any other due diligence Buyer deems necessary. Seller shall cooperate with Buyer in making such inspections. Buyer and its agents will have the right to enter the Property at reasonable times before Closing to perform such surveys, analyses, studies, appraisals, and other due diligence that Buyer deems necessary; provided, however, that Buyer shall give Seller forty-eight (48) hours' notice prior to entering the Property. Any area disturbed by Buyer's inspections shall be restored by Buyer, at Buyer's sole costs and expense, to its pre-inspection condition. Buyer through Buyer's selected provider shall pay for an Environmental Site Assessment "Phase 1" and hazardous building materials survey at Buyer's sole cost and expense. If the "Phase 1" report indicates the recommendation for further site investigation, the costs of a "Phase 2" report shall therefore be borne by the Buyer. If Seller shall not consent to Phase 2 investigations this Agreement shall terminate, in which case the Buyer will receive a refund of the Earnest Money. In the event that a hazardous building materials survey and "Phase

2" report indicates that "Phase 3" remediation and abatement are necessary, Buyer through Buyer's selected provider shall obtain preliminary estimates for the cost to perform the necessary work; however, the total costs for all "Phase 1, 2, and 3" investigations, remediation, and abatement shall not exceed $400,000. In the event these total costs exceed $400,000 based on preliminary estimates, Buyer may: (1) elect to pay the additional costs in Buyer's sole discretion; (2) terminate this Agreement in which event the Earnest Money shall be returned to Buyer; or (3) work with the Seller to amend this Agreement whereby both parties will mutually agree on payment for additional costs. Buyer shall be named as the intended recipient and beneficiary of the "Phase 2" report and "Phase 3" work along with the Seller.

6. **Conditions Precedent to Closing.**

6.1 **Conditions Precedent to Buyer's Obligations.** In addition to any other conditions contained in this Agreement, the conditions set forth in this Section 6.1 must be satisfied prior to Buyer's obligation to acquire the Property. Buyer may waive the conditions in this Section 6.1 by written notice since these conditions are intended solely for Buyer's benefit. In the event any condition is not satisfied or waived on or before the applicable deadline set forth below, and if no deadline is set forth below then on or before Closing, Buyer will have the right to terminate this Agreement, in which event the Earnest Money shall promptly be returned to Buyer.

6.1.1 City Approval. Purchase of the Property must be approved by the Silverton City Council at the next regular Silverton City Council meeting after the Effective Date.

6.1.2 Appraisal. The Buyer shall contract and pay for an independent MAI appraisal (subject to no extraordinary assumptions). The MAI appraisal will be completed in accordance with generally accepted appraisal standards.

6.1.3 Due Diligence and Inspection Results. Buyer must be satisfied, in its sole and absolute discretion, with its review of the Due Diligence Documents and the results of Buyer's inspections of the Property conducted under Section 5.2 above. Buyer shall have until sixty days after the Effective Date of this Agreement to complete its due diligence and inspections. If Buyer notifies Seller on or before sixty (60) days from the Effective Date of this Agreement that Buyer is not satisfied with the Property due to the results of its due diligence and inspections, the Closing Date may be extended by the Buyer for a period of thirty (30) days so that Seller and Buyer may address such results. If at the end of the 30-day period, Buyer and Seller have not reached an agreement regarding the issues disclosed as a result of such due diligence and inspections, Buyer may extend the Closing Date for an additional thirty (30) days to complete due diligence items.

6.1.4 Title. At Closing, the Title Company must be committed to issue to Buyer the Title Policy described below in Section 9. After the Purchase Price has been paid as set forth under Section 7.2.1 below, the Seller shall convey fee simple title to the Property as set forth in Section 7.1.1 below.

6.1.5 Representations, Warranties, and Covenants of Seller. Seller's representations, warranties, and covenants set forth in this Agreement shall be true and correct as of the Closing Date.

6.1.6 No Material Changes. At Closing, there shall have been no material adverse changes related to or connected with the Property.

6.1.7 Seller's Deliveries. Seller shall have timely delivered each item to be delivered by Seller pursuant to this Agreement, including (without limitation) the documents and materials described below in Section 7.1.

6.1.8 Removal of Personal Property and Debris. At Closing, Seller shall have removed or have caused to be removed from the Property, at Seller's sole cost and expense, any and all personal property and/or trash, rubbish, debris, illegally dumped materials or illegal fill materials. This provision shall survive Closing.

6.2 Conditions Precedent to Seller's Obligations. In addition to other conditions contained in this Agreement, the conditions set forth in this Section 6.2 must be satisfied prior to Seller's obligation to convey the Property. Closing and Seller's obligations with respect to the transactions contemplated by this Agreement are subject to Buyer's delivery to the Title Company on or before the Closing Date of (i) the balance of the Purchase Price and (ii) the documents and materials described below in Section 7.2.

6.3 Failure of Conditions. In the event any of the conditions set forth above in Sections 6.1 or 6.2 are not timely satisfied or waived for a reason other than the default of Buyer or Seller under this Agreement, then this Agreement, escrow, and the rights and obligations of Buyer and Seller hereunder shall terminate and the Earnest Money shall be returned to Buyer.

6.4 Cancellation Fees and Expenses. In the event the escrow terminates because of the nonsatisfaction of any condition for a reason other than the default of Seller under this Agreement, Buyer shall pay the cancellation charges required to be paid to the Title Company. In the event this escrow terminates because of Seller's default, Seller shall pay the cancellation charges required to be paid to the Title Company. This provision is activated only upon the Effective Date.

7. Deliveries to the Title Company.

7.1 By Seller. On or before the Closing Date, Seller shall deliver the following into escrow with the Title Company:

7.1.1 Deed. A Statutory Warranty Deed (the "Deed"), duly executed and acknowledged in recordable form by Seller, conveying the Property to Buyer free and clear of all liens and encumbrances except the Permitted Exceptions accepted by Buyer pursuant to Section 4.1 above. The Title Company's usual, preprinted exceptions (listed as General Exceptions 1-5 on the Title Report) shall not be listed as exceptions on the Deed.

7.1.2 Nonforeign Certificate. Seller represents and warrants that it is not a "foreign person" as defined in IRC §1445. Seller shall give Buyer a certification to this effect in the form required by that statute and related regulations.

7.1.3 Proof of Authority. Such proof of Seller's authority to enter into this Agreement and consummate the transaction contemplated hereunder, as may be reasonably required by the Title Company and/or Buyer.

7.1.4 Lien Affidavits. Any lien affidavits or mechanic's lien indemnifications as may be reasonably requested by the Title Company in order to issue the Title Policy.

7.1.5 Other Documents. Such other fully executed documents and funds as are required of Seller to close the sale in accordance with this Agreement, including (without limitation) escrow instructions.

7.2 By Buyer. On or before the Closing Date, Buyer shall deliver the following into escrow with the Title Company.

7.2.1 Balance of the Purchase Price. The balance of the Purchase Price, in accordance with Section 2.2 above.

7.2.2 Proof of Authority. Such proof of Buyer's authority to enter into this Agreement and consummate the transaction contemplated hereunder, as may be reasonably required by the Title Company and/or Seller.

7.2.3 Other Documents. Such other fully executed documents and funds as are required of Buyer to close the sale in accordance with this Agreement, including (without limitation) escrow instructions.

7.2.4

8. **Deliveries to Buyer at Closing.**

8.1 Right to Possession. At Closing, Seller shall deliver to Buyer exclusive possession of the Property and keys to all improvements located on the Property.

9. **Title Insurance.** At Closing, Seller shall cause the Title Company to issue to Buyer a standard ALTA owner's title insurance policy in the full amount of the Purchase Price, insuring fee simple title vested in Buyer or its nominees, subject only to the Permitted Exceptions as established under Section 4 of this Agreement and (b). The policy shall include an endorsement insuring unrestricted vehicular access from the Property to a public road (the "Title Policy").

10. **Closing Costs.** Seller shall pay for the Title Policy, one-half of all escrow fees, any real property transfer or excise taxes, all recording charges other than those allocated to Buyer below, and Seller's share of prorations pursuant to Section 11 below. Buyer shall pay the cost of recording the Deed, one-half of all escrow fees, and Buyer's share of prorations pursuant to Section 11 below. Buyer and Seller each shall pay for its own legal and professional fees

incurred. All other costs and expenses are to be allocated between Buyer and Seller in accordance with the customary practice in the county where the Property is located.

11. Prorations and Taxes.

11.1 Prorations. Any and all state, county, and/or city taxes for the current year, rents, or other income or operating expenses pertaining to the Property will be prorated between Seller and Buyer as of the Closing Date.

11.2 Taxes and Assessments. All taxes, assessments, and encumbrances that will be a lien against the Property at Closing, whether or not those charges would constitute a lien against the Property at settlement, shall be satisfied by Seller at Closing. If Seller shall fail to do so, Buyer may pay any such tax, assessment, encumbrance or other charge and deduct an amount equal to any such payment from the Purchase Price. If the Property is subject to farm or forest deferred taxes, Seller will have no obligation or responsibility for said deferred taxes, unless the Property becomes disqualified for or loses its deferred tax status as a result of Seller's actions prior to Closing in which case such taxes shall be Seller's responsibility.

12. **Seller's Representations and Warranties.** Seller hereby warrants and represents to Buyer the following matters, and acknowledges that they are material inducements to Buyer to enter into this Agreement. To the extent allowed under state law. Seller agrees to indemnify, defend, and hold Buyer harmless from all expense, loss, liability, damages and claims, including (without limitation) attorneys' fees, arising out of the breach or falsity of any of Seller's representations, warranties, and covenants. These representations and warranties shall survive Closing. Seller warrants and represents to Buyer that the following matters are true and correct, and will remain true and correct through Closing:

12.1 Authority. Seller has full power and authority to enter into this Agreement (and the persons signing this Agreement for Seller, if Seller is not an individual, have full power and authority to sign for Seller and to bind it to this Agreement) and to sell, transfer and convey all right, title, and interest in and to the Property in accordance with this Agreement. No further consent of any partner, shareholder, creditor, investor, judicial or administrative body, governmental authority, or other party is required.

12.2 Unrestricted Access. To Seller's knowledge, the Property has unrestricted, insurable vehicular access to a public road.

12.3 Hazardous Substances. For purposes of this Agreement, the term "Hazardous Substances" has the meaning defined in and includes those substances set forth in ORS 465.200. Seller warrants and represents as follows:

(a) Seller is aware that there is lead-based paint and asbestos that has been detected on the Property. Aside from the lead-based paint and asbestos, Seller has not brought onto, stored on, buried, used on, emitted or released from, or allowed to be brought onto, stored on, buried, used on, emitted, released from, or produced or disposed of, from, or on the Property, any Hazardous Substances in violation of any environmental laws of the federal or state government;

(b) To Seller's knowledge, there were underground storage tanks on the Property at one point in time but they have been removed or mitigated but Seller does not have documentation for this and cannot guarantee that an underground storage tank does not exist;

(c) To Seller's knowledge, the Property is materially in compliance with applicable state and federal environmental standards and requirements affecting it;

(d) Seller has not received any notices of violation or advisory action by regulatory agencies regarding environmental control matters or permit compliance with respect to the Property;

(e) Seller has not transferred, and to Seller's knowledge no other person has transferred, Hazardous Substances from the Property to another location that is not in compliance with applicable environmental laws, regulations, or permit requirements; and

(f) There are no proceedings, administrative actions, or judicial proceedings pending or, to Seller's knowledge, contemplated under any federal, state, or local laws regulating the discharge of hazardous or toxic materials or substances into the environment.

12.4 Encroachments. To Seller's knowledge (a) all structures and improvements, including any driveways and accessory structures, are wholly within the lot lines of the Property, (b) no existing building, structure, or improvement of any kind encroaches upon the Property from any adjacent property, and (c) there are no present or past discrepancies or disputes regarding the boundaries of the Property.

12.5 Rights and Contracts Affecting Property. Except for this Agreement, Seller has not entered into any other contracts for the sale of the Property, nor do there exist any rights of first refusal or options to purchase the Property. Except for those exceptions of record listed on the Title Report, Seller owns the Property in fee, free and clear of all liens, conditions, reservations, mortgages, leases, licenses, easements, prescriptive rights, permits, or other similar encumbrances. Seller has not sold, transferred, conveyed, or entered into any agreement regarding timber rights, mineral rights, water rights, "air rights," or any other development or other rights or restrictions relating to the Property, and to Seller's knowledge no such rights encumber the Property. There are no service contracts or other agreements pertaining to the Property that Seller will be required to assume at Closing. This provision is activated only upon the Effective Date.

12.6 Possession. Except as specifically set forth in this Agreement, there are no leases, licenses, or other agreements permitting, nor has Seller entered into any course of conduct that would permit, any person or entity to occupy or use any portion of the Property. Seller shall deliver immediate possession of the entire Property to Buyer at Closing.

12.7 Recitals. The statements and information set forth in the Recitals are true and correct.

12.8 No Legal Proceedings. There is no suit, action, arbitration, judgment, legal, administrative, or other proceeding, claim, lien, or inquiry pending or threatened against the

Property or against Seller that could (a) affect Seller's right or title to the Property, (b) affect the value of the Property, or (c) subject an owner of the Property to liability.

12.9 Mechanic's and Other Liens. No work on the Property has been done or materials provided that would give rise to actual or impending mechanic's liens, private liens, or any other liens, against the Property.

12.10 Public Improvements or Governmental Notices. To Seller's knowledge, there are no intended public improvements which will result in the creation of any liens upon the Property, nor have any notices or other information been served upon Seller from any governmental agency notifying Seller of any violations of law, ordinance, rule or regulation which would affect the Property.

12.11 Breach of Agreements. The execution of this Agreement will not constitute a breach or default under any agreement to which Seller is bound or to which the Property is subject.

12.12 Bankruptcy Proceedings. No attachments, execution proceedings, assignments for the benefit of creditors, insolvency, bankruptcy, reorganization, or other proceedings are pending or, to Seller's knowledge, threatened against Seller, nor are any such proceedings contemplated by Seller.

12.13 Changed Conditions. If Seller discovers any information or facts that would materially change the foregoing warranties and representations, Seller shall immediately give notice to Buyer of those facts and information. If any of the foregoing warranties and representations ceases to be true before Closing, Seller shall use its best efforts to remedy the problem, at its sole expense, before Closing. If the problem is not remedied before Closing, Buyer may elect to either: (a) terminate this Agreement, in which case Buyer will have no obligation to purchase the Property and the Earnest Money shall be refunded to Buyer, or (b) extend the Closing Date for a period not to exceed forty-five (45) days or until such problem has been remedied, whichever occurs first. Should Buyer extend the Closing Date and the problem is not remedied within the 45-day timeframe, Buyer may then elect to terminate this Agreement and receive a refund of its Earnest Money; provided, however, that such election will not constitute a waiver of Buyer's rights in regard to any loss or liability suffered as a result of a representation or warranty not being true, nor will it constitute a waiver of any other remedies provided in this Agreement or by law or equity.

13. **Condition of the Property Through Closing.** Seller further represents, warrants, and covenants that until this transaction is closed or escrow is terminated, whichever occurs first, Seller shall (a) maintain the Property in substantially the same condition as it was on the Effective Date, with no tree cutting, timber harvesting, or alteration of the Property in any way, (b) keep all existing insurance policies affecting the Property in full force and effect, (c) make all regular payments of interest and principal on any existing financing, (d) comply with all government regulations, and (e) keep Buyer timely advised of any repair or improvement required to keep the Property in substantially the same condition as it was on the Effective Date.

14. **Buyer's Representations and Warranties.** In addition to any express agreements of Buyer contained herein, the following constitute representations and warranties of Buyer to Seller:

(a) Subject to the conditions stated herein, Buyer has the legal power, right, and authority to enter into this Agreement and the instruments referred to herein and to consummate the transactions contemplated herein;

(b) Subject to the conditions stated herein, all requisite action has been taken by Buyer in connection with entering into this Agreement and the instruments referred to herein and the consummation of the transactions contemplated herein; and

(c) Subject to the conditions stated herein, the persons executing this Agreement and the instruments referred to herein on behalf of Buyer have the legal power, right, and actual authority to bind Buyer to the terms and conditions of this Agreement.

15. **Legal and Equitable Enforcement of This Agreement.**

15.1 Default by Seller. In the event Closing and the consummation of the transaction herein contemplated do not occur by reason of any default by Seller, Buyer shall be entitled to all its out-of-pocket expenses incurred in connection with the transaction, including the Earnest Money, and will have the right to pursue any other remedy available to it at law or equity, including the specific performance of this Agreement.

15.2 Default by Buyer. In the event Closing and the consummation of the transaction herein contemplated do not occur by reason of any default by Buyer, Buyer and Seller agree that it would be impractical and extremely difficult to estimate the damages that Seller may suffer. Therefore, Buyer and Seller agree that a reasonable estimate of the total net detriment that Seller would suffer in the event that Buyer defaults and fails to complete the purchase of the Property is and will be an amount equal to the Earnest Money. This amount shall be Seller's sole and exclusive remedy (whether at law or in equity), and the full, agreed, and liquidated damages for the breach of this Agreement by Buyer. The payment of said amount as liquidated damages is not intended as a forfeiture or penalty. All other claims to damage or other remedies are hereby expressly waived by Seller. Upon default by Buyer, this Agreement will terminate and except as set forth in this section, neither party will have any further rights or obligations hereunder or to one another.

16. **Risk of Loss, Condemnation.** Seller bears the risk of all loss or damage to the Property from all causes, through the Closing Date, except those that are caused directly by the Buyer or his agents, which shall be the responsibility of the Buyer to remedy in a mutually agreeable manner. If, before the Closing Date, all or any part of the Property is damaged, destroyed, condemned, or threatened with condemnation, Seller shall give Buyer written notice of such event. Buyer may terminate this Agreement by giving written notice to Seller within fifteen (15) days following receipt by Buyer of written notice from Seller of such casualty or condemnation and the Title Company shall return to Buyer the Earnest Money and any accrued interest thereon.

17. **Notices.** All notices required or permitted to be given must be in writing to the address set forth below and will be deemed given upon (a) personal service or (b) deposit in the United States Mail, postage prepaid. All such notices shall be deemed received (x) upon personal service, (y) five (5) days after deposit in the United States Mail, postage prepaid, or (z) one (1) day after deposit with a nationally recognized overnight courier service.

To Seller:
Phone:
Email:

To Buyer:: City of Silverton
Attn: City Manager
306 S. Water Street
Silverton, OR 97381
Phone: 503-874-2205
Email: CWurster@silverton.or.us

The foregoing addresses may be changed by written notice, given in the same manner. Notice given in any manner other than the manners set forth above will be effective when received by the party for whom it is intended. Telephone, email, and fax numbers are for information only.

18. **Broker or Commission.** Seller represents and warrants that it engaged the services of Tom Hendrie of SVN Commercial Advisors, LLC, a real estate broker in connection with this Agreement whose real estate commission will be paid for by the Seller. In the event any person or entity asserts a claim for a broker's commission or finder's fee against one of the parties to this Agreement, then Seller shall indemnify, hold harmless, and defend Buyer from and against any such claim if based on any action, agreement, or representations made by Seller.

19. **Further Actions of Buyer and Seller.** Buyer and Seller agree to execute all such instruments and documents and to take all actions pursuant to the provisions of this Agreement in order to consummate the purchase and sale contemplated and both parties shall use their best efforts to accomplish Closing in accordance with the provisions hereof.

20. **Miscellaneous.**

20.1 Partial Invalidity. If any term or provision of this Agreement or the application to any person or circumstance is, to any extent, found invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons or circumstances, other than those to which it is held invalid or unenforceable, will not be affected thereby, and each such term and provision of this Agreement will be valid and be enforced to the fullest extent permitted by law.

20.2 Waivers. No waiver of any breach of any covenant or provision contained herein will be deemed a waiver of any preceding or succeeding breach thereof, or of any other covenant or provision herein contained. No extension of time for performance of any obligation or act will be deemed an extension of the time for performance of any other obligation or act.

20.3 Survival of Representations. The covenants, agreements, representations, and warranties made herein shall survive Closing, specifically those obligations that explicitly state they will survive closing, will not merge into the Deed upon recordation in the official real property records.

20.4 Representation. This Agreement was prepared by Buyer and modifications were made at the request of Seller's legal counsel prior to execution of this Agreement by the parties. Accordingly, this Agreement shall be construed as if it had been prepared by both parties.

20.5 Entire Agreement. This Agreement (including any exhibits attached to it) is the final expression of, and contains the entire agreement between, the parties with respect to the subject matter of this Agreement and supersedes all prior understandings with respect to it. This Agreement may not be modified or terminated, nor may any obligations under it be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein.

20.6 Time of Essence. Seller and Buyer hereby acknowledge and agree that time is strictly of the essence with respect to every term, condition, obligation, and provision contained in this Agreement. Unless otherwise specified herein, in computing any period of time described in this Agreement, whenever a date for an action required to be performed falls on a Saturday, Sunday, or a state or federal holiday, then such date shall be extended to the following business day.

20.7 Recitals. The statements and information set forth in the Recitals are hereby incorporated as if fully set forth herein and shall be used for the purposes of interpreting this Agreement.

20.8 Governing Law. The parties acknowledge that this Agreement has been negotiated and entered into in the state of Oregon. The parties expressly agree that this Agreement is governed by and should be interpreted in accordance with the laws of the state of Oregon.

THE PROPERTY DESCRIBED IN THIS INSTRUMENT MAY NOT BE WITHIN A FIRE PROTECTION DISTRICT PROTECTING STRUCTURES. THE PROPERTY IS SUBJECT TO LAND USE LAWS AND REGULATIONS THAT, IN FARM OR FOREST ZONES, MAY NOT AUTHORIZE CONSTRUCTION OR SITING OF A RESIDENCE AND THAT LIMIT LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930 IN ALL ZONES. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301, AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL,

TO VERIFY THE EXISTENCE OF FIRE PROTECTION FOR STRUCTURES AND THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

IN WHEREOF, the parties have executed this Agreement as of the last date of signature specified below.

BUYER:
City of Silverton

By: Christy S. Wurster, City Manager

Date: 07/05/2017

SELLER:
Silver Falls School District

By: Andy Bellanco, Superintendent

Date: 7/5/17

Exhibit A

Property Descriptions (Attached)

Parcel #	Map/TaxLot	Marion Co. Deed Ref	
R101904	061W35BC08000	14-0083	Also 224-95
R17678	061W35BC08100	14-0083	Also 224-95
R101868	061W34AD00500	471-611	
R101869	061W34AD00600	614-821	
R101865	061W34AD00700	223-376	

AMERITITLE: FARM REPORT / Marion (OR)

#1

Owner	: Silver Falls School Dist 4J	Parcel #	: R101665
Site	: *no Site Address*	Ref Parcel #	: 061W34AD00700
Mail	: 612 Schlador St Silverton Or 97381	16-17Taxes	:
Use	: R10 Exempt,School,Residential	MktTotal	: $60,100
MapGrid	:	Deed Type	: Misc
Sale Date	: Sales Price :	Doc #	: 223-0376
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: BROWNS ADDITION, BLOCK 1, LOT 1 & : 2, ACRES 0.37		

Bedrooms: Bath: YearBuilt: BldgSqft: Acres: .37

#2

Owner	: Silver Falls School Dist 4J	Parcel #	: R101868
Site	: *no Site Address*	Ref Parcel #	: 061W34AD00500
Mail	: 612 Schlador St Silverton Or 97381	16-17Taxes	:
Use	: R10 Exempt,School,Residential	MktTotal	: $45,000
MapGrid	:	Deed Type	: Misc
Sale Date	: Sales Price :	Doc #	:
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: BROWNS ADDITION, BLOCK 1, LOT 5, : ACRES 0.18		

Bedrooms: Bath: YearBuilt: BldgSqft: Acres: .18

#3

Owner	: Silver Falls School Dist 4J	Parcel #	: R101869
Site	: *no Site Address*	Ref Parcel #	: 061W34AD00600
Mail	: 612 Schlador St Silverton Or 97381	16-17Taxes	:
Use	: R10 Exempt,School,Residential	MktTotal	: $45,000
MapGrid	:	Deed Type	:
Sale Date	: Sales Price :	Doc #	:
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: BROWNS ADDITION, BLOCK 1, LOT 6, : ACRES 0.18		

Bedrooms: Bath: YearBuilt: BldgSqft: Acres: .18

#4

Owner	: Silver Falls School Dist 4J	Parcel #	: R101804
Site	: 410 N Water St Silverton 97381	Ref Parcel #	: 061W35BC08000
Mail	612 Schlador St Silverton Or 97381	16-17Taxes	.
Use	: Q20 Ins,Other School	MktTotal	: $266,820
MapGrid	:	Deed Type	: Misc
Sale Date	: Sales Price :	Doc #	: 14-0083
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: BROWNS ADDITION, LOT FR 9 & ADJ AC, : ACRES 0.93		

Bedrooms: Bath: YearBuilt: BldgSqft: Acres: .93

#5

Owner	: Silver Falls School Dist 4J	Parcel #	: R17678
Site	: 410 N Water St Silverton 97381	Ref Parcel #	: 061W35BC08100
Mail	: 612 Schlador St Silverton Or 97381	16-17Taxes	:
Use	: Q20 Ins,Other School	MktTotal	: $1,621,540
MapGrid	:	Deed Type	: Misc
Sale Date	: Sales Price :	Doc #	: 14-0083
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: ACRES 1.80 :		

Bedrooms: Bath: YearBuilt: BldgSqft: Acres: 1.80

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Know all men by these presents that [illegible] Coolidge and S. T. Coolidge his wife, James Brown and Lucinda Brown his wife, and F. McClain for the consideration of Three Hundred and Fifty Dollars to them paid the receipt whereof is hereby acknowledged have bargained sold and quit claimed, and by these presents do bargain sell and quit claim unto School District No 4 in Marion County Oregon, the following described premises to wit Commencing [illegible] North 27° 27' W. from the S. W. corner of Lot No [illegible] in the town of Silverton in Marion County Oregon thence N 27° 27' W. 4.63 chains along the E. side of water street thence N 33' [illegible] 4.25 chains thence S 27° 27' E 4.63 chains to the [illegible] thence S 62° 33' W. with the N. side of [illegible] 4.25 chs to the place of beginning and containing 1.86 acres be the same more or less, To have and to hold the above mentioned and described premises together with the tenements and appurtenances thereunto belonging or in anywise appertaining, unto the said School District No 4 in Marion County Oregon, forever.

In Witness Whereof we have hereunto set our hands and seals this [illegible] day of November A.D. 1871.

A. Coolidge,
Sarah T. Coolidge,
James Brown,
Lucinda Brown,
Fielding McClain,
(Revenue stamp [illegible])

Witness:
W. H. Lewis
J. M. Brown

State of Oregon County of Marion [illegible]

[illegible] of November A.D. 1871 personally appeared before me the undersigned [illegible] Coolidge and S. T. Coolidge his wife, and James Brown and Lucinda [illegible] wife and F. McClain who are known to me to be the identical [illegible] described in and who executed the foregoing conveyance, and [illegible] that they executed the same for the purposes therein set forth [illegible] said S. T. Coolidge and Lucinda Brown on examination separate and apart from their said husbands acknowledged that they [illegible] freely and without fear or compulsion from any one.

W. H. Lewis
Justice of the Peace

Recorded November [illegible] 1871
A. B. Croyer Recorder
By C. [illegible] Deputy.

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successors and assigns forever. And the first parties above named do covenant to and with the said second party, its successors and assigns, that they are lawfully seized in fee simple of the above granted premises, that the above granted premises are free from all incumbrances except the mortgage above mentioned, city liens and taxes; and that they will and their heirs, executors and administrators shall warrant and forever defend the above granted premises, and every part and parcel thereof against the lawful claims and demands of all persons whomsoever, except as above stated.

IN WITNESS WHEREOF, the Grantors above named have hereunto set their hands and seals this 1st day of November 1935.

O. E. Scott /Se
Jessie K. Scott /Se

STATE OF OREGON }
County of Marion } ss.

On this, the 1st day of November, 1935, personally came before me, a Notary Public in and for said County and State, the within named O. E. Scott and Jessie K. Scott, his wife, to me personally known to b the identical persons described in, and who executed the within instrument and who each personally acknowledged to me that they executed the same freely and voluntarily for the uses and purposes therein named.

WITNESS my hand and official seal the day and year last above written.

Seal

Olga Bungsberg,
Notary Public for Oregon.
My commission expires Jan 10, 1938.

Recorded January 16, 1936 at 10:10 o'clock A.M.
Mildred R. Brooks, Recorder, by HS, Deputy.

THIS INDENTURE WITNESSETH, That Arthur Dickman and Maude Dickman, his wife, for the consideration of the sum of Ten and No/100 Dollars, to them paid, have bargained and sold and by these presents do bargain, sell and convey unto School District No. 4, Marion County, Oregon the following described premises, to-wit:

Commencing on the South line of "A" Street at a point north 80° East 137.4 feet from the Northwest corner of Lot numbered Ten (10) in Brown's Addition to the City of Silverton, Marion County, State of Oregon; thence South 18° East 58 feet to the southerly side of said Lot 10; thence North 62° 33' East 53 feet to the southeast corner of said Lot 10; thence North 27° 27' West 44.2 feet to the Northeast corner of said Lot; thence south 80° West 46 feet to the place of beginning.

It is hereby understood that this conveyance is made subject to the right retained by Michael J. Dolan and Cora A. Dolan, their heirs and assigns, to attach and use the sewer running across the said premises.

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said School District No. 4, Marion County, Oregon, its Heirs and Assigns forever.

And the said grantors do hereby covenant to and with the said grantee its Heirs and Assigns that they are the owner in fee simple of said premises; that said premises are free from all incumbrances and that they will warrant and defend the same from all lawful claims whatsoever.

IN WITNESS WHEREOF, We have hereunto set our hands and seals this 15th day of March, A. D. 1935.

Done in Presence of:
Leo M. Childs
Mildred Martin

Arthur Dickman Seal
Maude Dickman Seal

STATE OF OREGON }
County of Marion } ss.

On this 15th day of March, 1935, personally came before me, a Notary Public in and for said County and State, the within named Arthur Dickman and Maud Dickman, his wife, to me personally known to be the identical persons described in, and who executed the within instrument, and who each personally acknowledged to me that they executed the same freely and voluntarily for the uses and purposes therein named.

WITNESS my hand and official seal the day and year last above written.

Seal

Leo M. Childs,
Notary Public for Oregon.
My commission expires May 10, 1935.

Recorded January 16, 1936 at 2:15 o'clock P.M.
Mildred R. Brooks, Recorder, by HS, Deputy.

KNOW ALL MEN BY THESE PRESENTS, That [illegible] Celia L. McCammon [illegible]

[illegible] grantor s, in consideration of [illegible] Dollars, to them paid by School District No. [illegible], Marion County, Oregon [illegible], grantee, do es hereby grant, bargain, sell and convey unto the said grantee, its heirs and assigns, all the following real property, with the tenements, hereditaments and appurtenances, situated in the County of Marion and State of Oregon, bounded and described as follows, to-wit:

Lot Five (5), Block One, (1), Brown's Addition to Silverton, in Marion County, Oregon.

[redacted]

To Have and to Hold the above described and granted premises unto the said grantee, its heirs and assigns forever.

And the grantor s do covenant that they are lawfully seized in fee simple of the above granted premises free from all encumbrances, whatsoever

and that they will and their heirs, executors and administrators, shall warrant and forever defend the above granted premises, and every part and parcel thereof, against the lawful claims and demands of all persons whomsoever.

Witness our hand s and seal s this 22nd day of January, 19 55.

Celia L. McCammon (SEAL)

Willard McCammon (SEAL)

STATE OF OREGON,
County of Marion } ss.

On this 22nd day of January, 19 55, before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named Celia L. McCammon and Willard McCammon, her husband who are known to me to be the identical individuals described in and who executed the within instrument, and acknowledged to me that they executed the same freely and voluntarily.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last above written.

C. B. Andersen
Notary Public for Oregon.
My Commission expires May 17, 1958

(Seal: C. B. ANDERSEN, NOTARY PUBLIC, [illegible])

WARRANTY DEED

Celia L. McCammon
et vir
TO
School District No. [illegible]
Marion County

AFTER RECORDING RETURN TO

C. B. ANDERSEN
107 MASONIC BLDG.
SILVERTON, ORE.

(DON'T USE THIS SPACE; RESERVED FOR RECORDING LABEL IN COUNTIES WHERE USED.)

STATE OF OREGON,
County of MARION } ss.

I certify that the within instrument was received for record on the [illegible] day of JAN 25 1955, 19...., at 9:21 o'clock a M., and recorded in Book 491 on page 611 Record of Deeds of said County.

Witness my hand and seal of County affixed.

[signature]
County Clerk—Recorder.

By .... Deputy.

490972

490972

[illegible]

BOYD M. ADAMS [illegible]

[illegible] County of Marion [illegible]

(Lot Six (6), [illegible] Addition to the City of Silverton, Marion County, Oregon. (See Volume 2, Page 15, Record of Town Plats of said County and State.)

To Have and to Hold, the above described and granted premises unto the said grantee ... heirs and assigns forever.

Witness My hands and seals this 30th day of March, 1956.

Boyd M. Adams (SEAL)

(SEAL)

(SEAL)

(SEAL)

STATE OF OREGON,

County of Douglas } ss.

On this 30th *day of* March, *1956*, before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within named BOYD M. ADAMS, Single, who is known to me to be the identical individual described in and who executed the within instrument, and acknowledged to me that he executed the same freely and voluntarily.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last above written.

Joe W. Payne
Notary Public for Oregon.
My commission expires ...

Bargain and Sale
DEED

BOYD M. ADAMS, Single

TO

SILVERTON SCHOOL DISTRICT NO. 4 C.

AFTER RECORDING RETURN TO

Silverton School Dist.
P.O. Box 97
Silverton, Ore.

DOCKET No.

797462

733

(DON'T USE THIS SPACE; RESERVED FOR RECORDING LABEL IN COUNTIES WHERE USED.)

STATE OF OREGON,

County of MARION } ss.

I certify that the within instrument was received for record on the ... day of APR 1 1956, 19..., at 2:10 o'clock P.M., and recorded in book 474 on page 521 Record of Deeds of said County.

Witness my hand and seal of County affixed.

[signature]
County Clerk—Recorder.

By ... Deputy.

797462

223 - 376

Marion County, Oregon, heirs and assigns forever.

And the said Grantor does hereby covenant to and with the said School District #4, Marion County, Oregon, their heirs and assigns that she is the owner in fee simple of said premises, that they are free from all incumbrances, and that she will warrant and defend the same from all lawful claims whatsoever.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 14th day of May, 1935.

Done in the presence of:

Katherine Ehlen

Mary A. Hoff /Seal

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } ss.

On the 14th day of May 1935, personally came before me a Notary Public in and for said County and State, the within named Mary A. Hoff, a single woman, to me personally known to be the identical person described in and who executed the within instrument and who each personally acknowledged to me that she executed the same freely and voluntarily for the uses and purposes therein named.

WITNESS my hand and seal this 14th day of May, 1935.

Seal

Lillian Ancarter
Notary Public in and for the County of Los Angeles, State of California
My commission expires March 9, 1939

Recorded Jan. 16, 1936 at 2:10 o'clock P.M.
Mildred R. Brooks, Recorder by MRB, Deputy.

THIS INDENTURE WITNESSETH, That Mary B. Nichols and L. D. Nichols, her husband, for the consideration of the sum of Ten Dollars to them paid, have bargained, sold and conveyed and by these presents do bargain, sell and convey unto School District No.4, Marion County, Oregon, the following described premises, to-wit:

All of Lot Two (2) in Block One (1) Brown's Addition to Silverton in the County of Marion, State of Oregon, as shown by the duly recorded plat thereof, on file and of record in Volume 2, page 13 Records of Town Plats for Marion County, Oregon.

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said School District No.4, Marion County, Oregon, its successors and assigns forever.

xx xxxx xxx xx xxxx xxx xxxx xxxxxxx xxx xxxxx xxxxxxxxxxxx xxxx xx xxxx xxxxx xxxx xxxxxxx xxxxxx xxxxxx xxxxxxx xxx xxxxxxxx xxxx xxxxx xxxxxxx

And the said Mary B. Nichols and L. D. Nichols, do hereby covenant to and with the said School District No.4, Marion County, Oregon, its successors and assigns that they are the owners in fee simple of said premises, that they are free from all incumbrances and that they will warrant and defend the same from all lawful claims whatsoever.

IN WITNESS WHEREOF, We have hereunto set our hands and seals this 24th day of August, 1935.

Done in the presence of:

Mary B. Nichols /Seal

L. D. Nichols /Seal

STATE OF OREGON }
COUNTY OF MARION } ss.

On the 24 day of August 1935, personally came before me a Notary Public in and for said County and State, the within named Mary B. Nichols and L. D. Nichols, her husband, to me personally known to be the identical persons described in and who executed the within instrument and who each personally acknowledged to me that they executed the same freely and voluntarily for the uses and purposes therein named.

WITNESS my hand and seal this 24th day of August, 1935.

George V. Hubbs
Notary Public for Oregon
My commission expires Feb. 15th, 1937

Seal

Recorded Jan. 16, 1936 at 2:10 o'clock P.M.
Mildred R. Brooks, Recorder by MRB, Deputy

Lisa Figueroa

From: Rosi Green <rosigreen@gmail.com>
Sent: Monday, July 10, 2017 5:35 PM
To: Lisa Figueroa
Subject: Eugene Field Purchase

Follow Up Flag: Follow up
Flag Status: Flagged

I'm writing to voice my support of the City of Silverton purchasing the Eugene Field property. This space is hugely important to the downtown area. I believe the City would take great care in ensuring an aesthetically pleasing and functional space. Incorporating some community green space and / or parking in that area would be a nice addition. It would be an shame to have such a large parcel purchased by somebody who could potentially not put a lot of thought or care into the importance of this location.

--

Rosi Green

PO Box 770, Silverton, OR 97381

503.302.6990 | rosi.green@gmail.com

Lisa Figueroa

From: Kyle Palmer
Sent: Wednesday, July 12, 2017 1:37 PM
To: steve@becknermedia.com
Cc: Lisa Figueroa
Subject: Re: Comments for proposed Eugene Field site

Hi Steve,
Thanks for the comments! I'll make sure they get into the record for Monday. Have a great day,
Kyle

Sent from my iPhone 7plus

On Jul 12, 2017, at 1:25 PM, "steve@becknermedia.com" <steve@becknermedia.com> wrote:

> Hi Kyle-
> I can't attend the council meeting and wasn't sure where to send my comments on the proposed city hall site, so I hope you don't mind that I am sending it to you!
>
> I think that the Eugene Field site would be perfect for the new city buildings. It is in a better location than the old Square Deal site, with easy access from both north and south. And there is enough room to accommodate some public green space as well as adequate parking spaces for police and city staff. If the facilities can be designed to compliment the existing downtownarchitecture, it would be a great addition to the overall feeling of a compact (non-sprawling) city.
>
> Thanks for the opportunity to comment!
>
> Steve Beckner
> ---
> www.becknermedia.com
> www.mtangelpub.com

Mission

To provide exceptional public service that ensures safety, maintains infrastructure, preserves our unique heritage, and protects natural resources while proactively pursuing emerging opportunities to enhance our quality of life.

Memorandum

City Council Meeting: July 17, 2017

To: Mayor Palmer and City Council Members

From: Dianne Hunt
Administrative Services Director

Through: Christy Wurster
City Manager

RE: Mass Gathering Report

This memo outlines the City of Silverton's Special Event current permit process and recommendations for a Mass Gathering permit, to be processed as a sub-section of the Special Event Application.

An outdoor Mass Gathering as defined by the State ORS 433.735-433.770 and adopted by Marion County is an assembly of persons whose actual number is, or reasonably can be anticipated to be:

1. Large Gathering is more than 3,000 persons at any time or more than 750 persons at any time on each of three calendar days during an assembly that continues or can reasonably be expected to continue for more than 120 hours.
2. Small Gathering is an assembly of persons who actual number is less than 3,000 but more than 750 persons at any time.

The Silverton Special Event is defined as, any event on city property involving a street closure a parade, or where the attendees and/or participants will exceed 200 people at any one time or during any one day of the event.

During a 12-month period, the City receives approximately 36 Special Event Applications. Of the 36 applications received, four (4) anticipate more than 1,000 participants, three (3) expect about 800 visitors, with the remained listing 300 or less attendees. About 33 applications received are from service groups or non-profit organizations whose fees are waived. The remaining Special Event applications are generally weddings or large family gatherings who rent the Pavilion and Kitchen at Coolidge McClaine Park.

These events average 7,800 volunteers and visitors who support Silverton's economy and enjoyment as stated in chapter 12.48 of the City Code, "The parks of this city are established and maintained as areas of recreation, relaxation and enjoyment for the public."

Staff reviewed seven Oregon cities to see if they had Mass Gathering Permits. All of the cities contacted required Special Event permits or parks reservations; however, only one, City of Detroit, had an Outdoor Mass Gathering Application. This is the only event permit Detroit has which was put in place in 2008 as a result of their Fireworks display over Detroit Lake which can reach upward of 10,000 participants. The event is sponsored by the business community who pays $150 for the permit.

Silverton's current process is separated into four permitted areas.

1. Coolidge McClaine Park outdoor picnic sections can be reserved, without a fee or deposit. The Pavilion's daily rate is $200 with a $50 refundable deposit. To rent the Kitchen, the event must also rent the Pavilion at the daily rate of $400 with a $350 refundable deposit. A Coolidge-McClaine Park Application is required and handled by Public Works Maintenance Division.
2. Old Mill Park & Amphitheater does not require a fee or deposit. An Old Mill Park application is required and handled by Public Works Maintenance Division.
3. Special Events. Depending on the type and/or location of event, there may be a fee. Requests for any fee exemptions must be in writing and approved by the City Manager, as authorized by the City Council at their August 3, 2015 meeting. If the event is to take place in any of the City parks, the applicant must complete a park application, processed through the Maintenance Division, and a Special Event application, processed through Administration.

A separate Alcohol and/or Sound Permit Applications must each be submitted with the Application, and approved by the City. The Alcohol Permit requires a non-refundable $25.00 fee.

At the April 3, 2017 City Council meeting, staff presented Council with a request from the Oregon Garden to use Westfield Property for camping. Since Westfield Property is not a designated City park, staff requested and Council approved a $5,000 Mass Gathering Fee and a $5,000 deposit, in addition to a TOT fee (Transient Occupancy Tax). The Mass Gathering Permit was approved as a one-time event.

Planning for a large gathering is a joint effort of the City's contingency planning team. The team conducts a hazard analysis for any large event. The team identifies when the event may place strains on the safety of the public and on City staff. During the initial stage, each application is reviewed by City departments to ensure that all licensing and regulations, emergency response issues, resources and jurisdictions are identified, as well as persons responsible for particular types of hazards and risks. If a department determines that additional resources are needed, the Organizers are informed and responsible for obtaining the resources.

Following the request from the Oregon Garden, staff expanded the Special Event Application to address events with anticipated attendance exceeding 750 people.

Staff seeks direction from the Council on the following questions:

1. Should the City require a fee for mass gathering events? If so, in what amount?
2. Will the fee apply to mass gatherings only within city parks or will it apply to other city-owned properties.
3. Will the fee apply to events held on private property?

.

City	Permit	Fees
Detroit	Outdoor Mass Gathering Permit	$150/event
Albany	Special Event Permit	Permit Fee Refundable Deposit - $100 Impact Fee Refundable Alcohol Deposit - $150 Refundable Key Deposit - $25
Canby	Special Event Permit	Park Fee: $375/day (resident); $750/day (non-resident) Gazebo: $110/5hrs (resident); $220/5 hrs. (non-resident) Street Closure Fee: $50 (resident & non-resident)
Dallas	Special Event Permit	Brandvold Section w/Kitchen; Gazebo; and Memorial Shelter: Non-refundable reservation fee: $15/hour
McMinnville	Special Event Permit	Special Event Fees: Area up to 50,000 sq. ft.: $150 Area over 50,000 sq. ft.: $250
Tigard	Special Event Permit	Special Event Fees: 1-500 people: $75-$275 501-2,000 people: $475; More than 2000 people: $1,000 Alcohol Permit Fee: $25/event
Tualatin	Special Event Permit	1-499 people: $100-$150 500-999 people: $250-$300 1000-1999 people: $400-$500 More than 2000 people: $1,000

Working in a proactive partnership with our community to solve problems and enhance the quality of life for our citizens.

Memorandum

July 6, 2017

To: Mayor Palmer
Silverton Council Members
From: Jeff Fossholm, Chief
Thru: Christy S. Wurster, City Manager

Re: Informational Report SB **373** [*Pilot Program for Urban Deer Population Control*]

Issue: SB 373 was initiated through the 2017 legislative process to address the complaints and problems regarding the over-population of deer located within cities throughout the state. On June 14th SB 373 was signed into law by the Governor. This bill directs the Oregon Department of Fish and Wildlife (ODFW) to develop and adopt by rule a pilot program for urban deer population control for and by local governments.

Background: The Bill requires cities to first adopt an ordinance, resolution or order declaring that deer populations have risen to levels that constitute public nuisance, prior to petitioning ODFW for assistance in reducing those deer populations. It also requires that the governing body of a city has or shall adopt by ordinance restrictions on placing, depositing, distributing, storing or scattering food, garbage or any other attractant so as to knowingly constitute a lure, attractant or enticement for deer.

SB 373 further stipulates for ODFW to set rules for the pilot program to include but not limited to:

- Provisions for the means and manner by which the deer may be taken under the program, which include a prohibition on taking deer by dart or lethal injection.
- Provisions for ensuring, to the extent feasible, that the edible portions of any deer taken under the program are distributed, at the expense of the local governing body (City), to a local food bank or other charitable organization.
- Provision that any hides and antlers of deer taken under the program must be sold by government body to persons licensed to purchase them, or surrendered to ODFW.
- Provision to ensure that the number of deer taken under the pilot program do not exceed the number necessary to be taken to reduce the deer population to a level that no longer constitutes a public nuisance.

Upon requesting information from ODFW about their timeline on implementation of the pilot program, I learned that Silverton was the first city to make such an inquiry.

Dr. Doug Cottam, Wildlife Division Administrator responded to my request and said that they need to have any administrative rules (OAR's) on the pilot program prepared and approved prior to January 1, 2019.

As this is a new program for ODFW, it is starting out somewhat contentious as there are a good number of residents throughout the state wanting to protect deer from being killed. ODFW plans to take their time and provide numerous opportunities for public input prior to any new rules being adopted. Dr. Cottam also wanted to clarify that this is not a capture and re-locate deer program. SB 373 requires deer be killed and the deer meat processed at the city's cost and used by a food bank or non-profit organization to feed those in need. Without a partnership to use the deer meat, the pilot program cannot be implemented. Killing deer to just reduce the population and/or dumping the carcass for disposal will not be allowed. There is also the question about who will make a final determination as to whether or not there really is an actual urban deer population problem within a given city. If so, ODFW will also need to set a target for the reduction of deer to actually bring the local deer population numbers below the threshold of being a nuisance. This will require someone at ODFW such as a Field Biologist to evaluate and determine the hard number of deer for each city interested in being part of the pilot program.

Recommendation: As implementation by ODFW is basically 18 months in the future, we don't yet know the full extent of additional requirements required by OAR's. My suggestion is that we (the City of Silverton) wait until there is a clearer picture of any and all requirements prior to taking any action on this pilot program.

Attachment: SB 373

June 14, 2017
Governor Signed

79th OREGON LEGISLATIVE ASSEMBLY--2017 Regular Session

Enrolled
Senate Bill 373

Sponsored by Senator HANSELL, Representative BARRETO; Senator STEINER HAYWARD, Representatives ESQUIVEL, POST, RESCHKE (Presession filed.)

CHAPTER .....

AN ACT

Relating to urban deer population control.

Be It Enacted by the People of the State of Oregon:

SECTION 1. (1) As used in this section, "food bank or other charitable organization" has the meaning given that term in ORS 315.154.

(2) The State Fish and Wildlife Commission shall develop and adopt by rule a pilot program for urban deer population control that:

(a) Following the passage by a city of an ordinance, resolution or order declaring that deer populations have risen to levels that constitute a public nuisance, allows the city to petition the State Department of Fish and Wildlife for assistance in reducing deer population levels within city limits; and

(b) In cities where the department determines that deer populations do constitute a public nuisance, allows a local government body or an appropriate agent to take deer for the purpose of reducing deer population levels.

(3) To implement the pilot program under this section, the department shall consult with:

(a) The governing bodies of cities where high urban deer populations are a concern; and

(b) Food banks or other charitable organizations that serve the governing bodies described in paragraph (a) of this subsection.

(4) Rules for the pilot program adopted by the commission must include, but need not be limited to:

(a) Provisions for the means and manner by which deer may be taken under the pilot program, which must include a prohibition on taking deer by dart or lethal injection;

(b) Provisions for ensuring, to the extent feasible, that the edible portions of any deer taken under the pilot program are distributed, at the expense of the local government, to a local food bank or other charitable organization;

(c) A requirement that, if the hides and antlers of a deer taken under the program are not sold by the local government to persons licensed under ORS 498.019, that the antlers must be surrendered to the department; and

(d) Provisions for ensuring that the number of deer taken under the pilot program do not exceed the number necessary to be taken to reduce the deer population to a level that no longer constitutes a public nuisance.

(5) Prior to exercising any power granted by the pilot program adopted under this section, the governing body of a city shall adopt by ordinance restrictions on placing, depositing,

distributing, storing or scattering food, garbage or any other attractant so as to knowingly constitute a lure, attractant or enticement for deer.

SECTION 2. (1) The State Department of Fish and Wildlife shall first allow a local government to engage in activities pursuant to the pilot program adopted under section 1 of this 2017 Act no later than January 1, 2019.

(2) The department shall prepare and submit a report in the manner provided in ORS 192.245 on the implementation of the urban deer population control pilot program, that may include recommendations for legislation, to the committees of the Legislative Assembly related to the environment and natural resources during the 2027 regular session of the Legislative Assembly.

SECTION 3. Sections 1 and 2 of this 2017 Act are repealed on January 1, 2029.

Passed by Senate April 6, 2017

.....
Lori L. Brocker, Secretary of Senate

.....
Peter Courtney, President of Senate

Passed by House May 31, 2017

.....
Tina Kotek, Speaker of House

Received by Governor:

.....M.,....., 2017

Approved:

.....M.,....., 2017

.....
Kate Brown, Governor

Filed in Office of Secretary of State:

.....M.,....., 2017

.....
Dennis Richardson, Secretary of State

SILVERTON CITY COUNCIL STAFF REPORT
TO THE HONORABLE MAYOR AND CITY COUNCILORS

	Agenda Item No.: 8.7	**Topic**: Environmental Management Committee (EMC) Recommendations
	Report No.: 17-74	
	Agenda Type: DISCUSSION/ACTION	
	Meeting Date: July 17, 2017	**Attachments:** ☐ **Yes** ☒ **No**
Prepared By: Christian Saxe	**Reviewed By:** Dana Smith	**Approved By:** Dana Smith

RECOMMENDED MOTION:
City Staff recommends the Council discuss the recommendations proposed by the EMC and decide to implement, modify or take no action on the recommendations.

BACKGROUND:
The City Council created an Environmental Management Committee (EMC) in 2015 to consider environmental issues that may directly impact the City and its residents. At the June 19th, 2017 City Council meeting, staff was directed to work with the Council representative to bring back the committee's recommendations for action.

Currently, the most prominent discussion items on the E.M.C. have been as follows:

1) The potential ban on smoking in the City's parks.

2) The potential ban on smoking on the City's downtown core sidewalks.

3) The potential ban on the use of Styrofoam food containers by food purveyors.

4) The potential ban on the use of "single use" plastic bags by retailers.

The EMC has recommended a City Council discussion on these items and on the feasibility of creating and implementing new City Ordinances based on these recommendations.

BUDGET IMPACT: **FY(s): On Going** **Funding Source: Not Applicable**

79th Oregon Legislative Assembly – 2017 Regular Session

SB 373 STAFF MEASURE SUMMARY

House Committee On Agriculture and Natural Resources

Prepared By: Misty Freeman, LPRO Analyst
Meeting Dates: 4/25, 5/23

WHAT THE MEASURE DOES:

Directs Oregon Fish and Wildlife Commission (Commission) to develop and adopt by rule pilot program for urban deer population control. Requires city to first adopt ordinance, resolution or order declaring that deer populations have risen to levels that constitute public nuisance prior to petitioning Oregon Department of Fish and Wildlife (ODFW) for assistance in reducing those populations. Stipulates that if ODFW makes such determination, program must allow local government body or agent to take deer to reduce populations within city limits. Requires pilot program rules to include direction on means and manner by which deer may be taken and prohibition on taking deer by dart or lethal injection; provision for edible portions of deer to be distributed to local food bank or charitable organization at expense of local government; requirement that if deer hides and antlers are not sold by local government to persons licensed to purchase them, antlers must be surrendered to ODFW; and provisions to ensure number of deer taken does not exceed number necessary to reduce deer population to level that no longer constitutes public nuisance. Directs ODFW to consult with governing bodies of cities where urban deer populations are of concern and with food banks or other charitable organizations that serve such cities. Requires local government to adopt ordinance restricting use of materials to lure, attract or entice deer prior to exercising any authority under this measure. Directs ODFW to first allow local governments to engage in activities under pilot program no later than January 1, 2019. Requires ODFW to report on program to Legislative Assembly during 2027 legislative session. Repeals pilot program on January 1, 2029.

ISSUES DISCUSSED:

- Voluntary pilot program for cities to participate in and pay for
- Concerns about numbers of deer, eating commercial and recreationally grown crops, leaving waste, acting aggressively
- Need for public process and safeguards such as anti-feeding ordinance before pilot program begins

EFFECT OF AMENDMENT:

BACKGROUND:

Individual deer can consume 5-10 pounds of forage per day, depending on the season. In urban and neighborhood settings, browsing can impact flower and vegetable gardens, damage landscapes and empty bird feeders. Browsing can damage economically valuable trees and other plants and reduce the yield of fruit trees. Bucks can damage shrubs and saplings by rubbing the bark with their antlers. Increased deer populations can also spread tick-borne illnesses, such as Lyme disease, in addition to other diseases and parasites. There have been cases of deer attacking people and pets, and in some cases killing small pets. Increased deer population in urban areas can also lead to increased vehicle accidents.

Senate Bill 373A would direct the Oregon Fish and Wildlife Commission to establish a pilot program to control urban deer populations in cities where deer constitute a public nuisance.

NOTICE OF PUBLIC HEARING
MARION COUNTY PLANNING COMMISSION

LEGISLATIVE AMENDMENT (LA) 17-001:

PURPOSE OF HEARING: To receive testimony on amendments to Marion County Urban Zone Code Chapter 16 to allow accessory dwelling units in certain zones.

DATE AND TIME OF HEARING: **Tuesday, August 1, 2017; 6:30 p.m.**

LOCATION OF HEARING: **Senator Hearing Room, Courthouse Square**
555 Court St NE, Salem

More information about the amendments is available on the Planning website:
http://www.co.marion.or.us/PW/Planning/Pages/commission.aspx

HOW TO PARTICIPATE: Anyone desiring to speak either for or against the proposed amendments may do so in person or by representative at the public hearing. Written comments may be filed with the Marion County Planning Division at least one day prior to the public hearing. The proposed amendments, documents and evidence relied upon by the County and applicable criteria are available for inspection at no cost and copies are available at the cost of ten cents per page from the Planning Division, 5155 Silverton Road NE, Salem, Oregon. A complete copy of relevant file information, including staff report and recommendations will be available seven days prior to the hearing. All testimony and evidence shall be directed to the applicable criteria or the person providing testimony shall state which other criteria is applicable to this proposal. **Mail written statements to the Marion County Planning Division, 5155 Silverton Road NE, Salem, OR 97305.**

LAND USE DECISION CRITERIA: Criteria upon which the decision will be based include:
1. Oregon Revised Statues 195 and 197
2. Marion County Code Chapter 16, Urban Zone Code

For information regarding this request contact: Brandon Reich, Senior Planner, Marion County Planning Division, 5155 Silverton Road NE, Salem, OR 97305. Phone: 503-566-4175; e-mail: breich@co.marion.or.us

ACCOMMODATION OF PHYSICAL IMPAIRMENT: In order to accommodate persons with physical impairments, please notify the Planning Division of any special physical or language accommodations you may need as far in advance of the public hearing as possible.

Wave Holdco, LLC
401 Parkplace Center, Suite 500
Kirkland, Washington 98033

Radiate Holdings, L.P.
301 Commerce Street, Suite 3300
Fort Worth, TX 76102

Via FedEx

June 20, 2017

Christy S. Wurster, City Manager
City of Silverton
306 South Water Street
Silverton, OR 97381

Dear Ms. Wurster:

On May 18, 2017, Radiate HoldCo, LLC, a Delaware limited liability company and an indirect wholly-owned subsidiary of Radiate Holdings, L.P. ("Radiate"), entered into an agreement to acquire all the outstanding membership interests of Wave Holdco, LLC ("Wave") from the holders thereof (the "Transaction"). A subsidiary of Wave, WaveDivision VII, LLC, currently holds a franchise to offer video service in your community. Radiate and Wave believe that the Transaction offers tremendous prospects for continued enhancements to the system and services available to customers in the City of Silverton.

When the Transaction is consummated, only the indirect control of your community's franchisee will have changed. Your community's franchise will continue to be held by WaveDivision VII, LLC, the same legal entity that holds the franchise today. Following the closing of the Transaction, WaveDivision VII, LLC agrees that it will continue to provide service pursuant to the terms of that franchise. However, it will do so under the ownership and indirect control of Radiate.

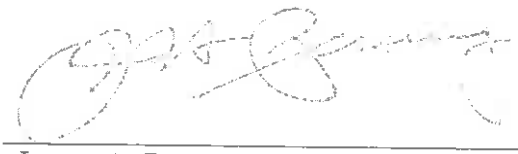
Radiate is a holding company that is majority owned and controlled by the principals of TPG Global, LLC (together with its affiliates, "TPG"). TPG has extensive experience with global public and private investments and is one of the most active private equity investors in the Internet ecosystem. Radiate, through its indirect subsidiaries RCN Telecom Services, LLC and Grande Communications Networks LLC, provides digital television, high-speed Internet, and voice communications services to approximately 656,000 subscribers in the District of Columbia, Illinois, Massachusetts, Maryland, New York, Pennsylvania, Virginia, and Texas, led by an experienced management team from Patriot Media Consulting, LLC.

The Transaction will bring three smaller independent, competitive providers of video, voice and Internet services under one roof, offering even stronger competition to the larger, well-established providers in the marketplace. Upon closing, Radiate will combine its resources and

expertise with Wave's knowledge of the local cable marketplace to build upon the successes of Wave and further enhance the customer experience in your community.

You do not need to take any action in response to this letter. Radiate and Wave have filed an application with the Federal Communications Commission ("FCC") for approval of the transfer of control of the Wave licenses to Radiate, and the FCC is currently reviewing the Transaction. The parties intend to close the Transaction following receipt of required regulatory approvals. If you have any questions regarding this matter, please call Jim Penney at 425-896-1891 or Seth Davidson at 202-434-7447 by **July 17, 2017**.

Sincerely,



James A. Penney
General Counsel
Wave Holdco, LLC
401 Parkplace Center, Suite 500
Kirkland, WA 98033

Seth A. Davidson
Mintz, Levin, Cohn, Ferris, Glovsky
and Popeo, P.C.
701 Pennsylvania Avenue NW, Suite 900
Washington, D.C. 20004
Counsel to Radiate Holdings, L.P.

wave

June 29, 2017

Stue Rasmussen
Silverton City Hall
306 S. Water St
Silverton, OR 97381

RE: WaveDivision Holdings, LLC ("Wave Broadband"); Rate Adjustment Notice

We are providing the following details in compliance with the 30-day advanced notification of an adjustment to rates under the applicable FCC regulations and the requirements of our franchise with the Silverton City Hall. Wave Broadband will be adjusting the retail price of some of its video services starting August 5th, 2017.

The monthly rates for the following services will be adjusted: Expanded Content (also known as Basic Cable), and any packages including that service, will increase by $1.96.

This rate adjustment is the direct result of annual programming cost increases from TV networks owned by Disney/ESPN, Turner Networks, regional sports programmers, and independent channel providers.

These rate changes are exclusive of franchise fees, regulatory fees, and other governmentally-imposed charges. Customers will receive detailed information covering the rate changes with their billing statement.

At Wave Broadband, we work hard to establish the best channel selection for our customers and communities while balancing rapidly increasing programming costs. We will continue to invest in our network to bring customers the latest technologies, enhancing their service experience, at very competitive prices.

Please contact me directly with any questions.

Sincerely,

SVP, Operations

401 Parkplace Center, Suite 500 Kirkland, WA 98033 425.576.8200 (t) 425.576.8221 (f) gowave.com

Department Updates

MEMORANDUM

SILVERTON PUBLIC WORKS

DATE: July 11, 2017

TO: Christy Wurster and City Council

FROM: Christian Saxe, Public Works Director

RE: **PUBLIC WORKS DEPARTMENT**
UPDATE FOR JULY 2017 MEETING

ENGINEERING DIVISION:

Public Projects:

- Steelhammer Road Improvements PH 1: This project will improve approximately 1000 lineal feet of road from Oak Street to Jaysie Drive. Notice to Proceed was issued to Pacific Excavation on July 10, 2017. A neighborhood Town Hall meeting was conducted on July 5th to discuss the project. Construction is expected to start around July 17th and continue through November.
- Sewerline Rehabilitation and Replacement: This project consisted of installing a Cast In Place Pipe (CIPP) within 2344 lineal feet of 15" sanitary sewer pipe. Michels Corporation completed this project.
- Transportation System Plan Update: DKS Associates will be providing a "Solutions Identification" memorandum in early July and a "Financial Outlook" memorandum in August.
- Silver Creek Overlook: In design which is projected to be finished and ready to advertise for construction bids in August
- James Avenue Bridge Improvements: The James Avenue Bridge is very old and has a limited life expectancy before it will need to be replaced. Unfortunately, repairs to the bridge will not provide any significant longevity to the life span of the bridge. It may be more cost effective to replace the bridge. For these reasons this project has been placed on hold. City staff will be looking at options to obtain federal grant funding to replace the bridge.
- Abiqua Heights Detention Pond Improvements: Staff is reviewing the conditions of this area and researching options for addressing the issues associated with the drainage system.
- McClaine Street Assessment: Staff is working on a potential pre-design and utility assessment RFQ.
- ODOT South Water Street Improvements: This project is being designed and constructed by ODOT. Construction is scheduled for 2020.
- 50-50 Sidewalk Applications: Two applications have been approved so far and work will take place this month

- An Eagle Scout Project approved in 2015-16 at the Silverton Reservoir that will improve several hundred feet of lake access trail beginning at the dock area is ready to begin. Work will be performed in two successive weekends (July 22nd and 29th) and will entail a detour of the lakeside trail.
- The crack sealing/skin patching work has been completed in preparation for the Marion County Slurry Seal Project. Slurry sealing is tentatively scheduled to begin in early to mid-August.

Private Projects:

- Silverplace Apartments: Work is ongoing.
- E Main Sanitary Sewer Extension: Project is substantially complete and contractor has punchlist items to finish prior to final acceptance
- Blackberry Preserve Subdivision: Waiting for developer action.
- 206 S Center –Storm Drainage: Remaining work consists of patching the asphalt in S Center Street and paving the driveway with porous asphalt
- St Paul Church Addition: Project is substantially complete and contractor has punchlist items to finish prior to final acceptance
- Pettit Inn & Pub: Waiting for developer action
- Dollar General: In design
- North Church Sanitary Sewer Extension: In design

MAINTENANCE DIVISION:

Water:

- Installed water meters for new construction and stopped meters
- Completed monthly meter reading
- Cross connection program wrapping up existing device tests for the year
- Completed water service installs for a number of new construction projects
- Pool – replaced 3" water meter
- Replaced a hydrant at the intersection of Oak and Monitor Road
- Repaired a water main line leak on Eureka Avenue
- Replaced a 2" pressure reducing valve on Edgewood Drive
- Contracted out annual compound water meter testing and repairs

Sewer:

- Responded to a number of sewer back-up calls
- Sewer mainline cleaning
- Completed sewer taps for a number of new construction projects
- Repaired sewer laterals on S Water Street

Streets:

- Grading gravel streets

- Hung street banners weekly
- Replaced signs as part of the street sign change-out program
- Regular street sweeping
- Street tree trimming
- Filled potholes
- Paved utility cuts

Parks:

- Standard cleaning and maintenance
- Installed pet waste bag holders at several parks
- Installed additional signage at several parks
- Mowed all parks and city right of ways
- Worked on dam vegetation clearing

Facilities:

- General clean-up around outside of city facilities
- Worked on bids for painting and siding of City Shop Buildings and Museum/Depot
- Minor repairs in community Center

Water Quality Division

Wastewater Treatment:

- The average daily flow for wastewater treated in June, 2017, was 1.172 MGD, representing a dry weather flow increase of 11.3% compared to June, 2016. Currently operating 29 consecutive months without a discharge permit violation.
- Replaced the drive belts for the rotary lobe primary sludge pump.
- Cleaned liftstation wetwells and maintained the vegetation at each site.
- Issued a written warning to Diana Foods for a pH violation.
- Filled and activated aeration basin no. 1 for service during the upcoming vegetable processing season.
- Assisted Keller and Associates engineers to gather flow data and measure liftstation performance at the Oregon Garden facility

Water Treatment

- In June 2017, WTP No. 2 treated an average of 1.56 MGD, a decrease of 6.6% compared to June, 2016.
- USGS is working to repair the new upstream Abiqua Creek flow monitoring gage, and develop a hydrologic rating for the gage. The downstream gage (at Hwy 214) is currently reading 30 cubic feet per second (cfs). At this time, during the 2015 summer drought, Abiqua Creek was flowing at 10 cfs. Silver Creek is currently flowing through town at a rate of 24 cfs (compared to 16.7 cfs in 2015).
- Operators replaced the chlorine residual monitor at the entrance to the distribution system.

Swimming Pool

- A burned lead wire caused the recirculation pump motor to ground. Operators quickly installed a spare motor and changed the pump empeller and mechanical seal. The pool was closed for less than one day for the repair.

Mission

To provide exceptional public service that ensures safety, maintains infrastructure, preserves our unique heritage, and protects natural resources while proactively pursuing emerging opportunities to enhance our quality of life.

Memorandum

City Council Meeting: July 17, 2017

To: Mayor Palmer and City Council Members

From: Dianne Hunt
Administrative Services Director

Through: Christy Wurster
City Manager

RE: H.E.A.L. Cities Report (Healthy Eating Active Living)

During the June 5, 2017 Regular Council Meeting, Councilor Plummer indicated he would like the City of Silverton to be a Level Four (4) H.E.A.L. City, and requested staff to provide Council with the criteria for a Level Four (4) city.

Staff reached out to the H.E.A.L. organization requesting the Level Criteria, and for a representative to review the City's Resolution and accomplishments which were presented to Council during the June 5, 2017 Council meeting. The Community Policy & Partnerships Lead of the H.E.A.L. program said the criteria are based upon developing policies in each of the four key policy areas (land use, healthy food, healthy infrastructure, and employee wellness). After reviewing the City's accomplishments, the Lead person said that since we have one to two policies in place in each of the four key policy areas, the city is at a Level 4 in the H.E.A.L. campaign.

Working in a proactive partnership with our community to solve problems and enhance the quality of life for our citizens.

Memorandum

July 5th, 2017

To: Jeff Fossholm, Chief of Police
Christy Wurster, City Manager
From: Sean Farris, Community Service Officer
Re: June CSO Report

25 hours a week, split time between parking and code enforcement as needed.

The following is an accounting of the number and types of complaints I pursued from May 25th, 2017 to July 5th, 2017. In any given month I am also spending some time pursuing unresolved code enforcement cases from the previous month.

Code Enforcement Complaints from 5-25-17 to 7-5-17	
Total Cases	22 (YTD 82)
Cases resolved/abated	11 (YTD 72)
Cases unresolved/abatement pending	11 (YTD 10)

Breakdown of Complaints Taken 5-25-17 to 7-5-17	
Noxious vegetation	7
Storage of Junk/Odor	2
Right-of-Way Encroachment	4
Storage in Right-of-Way	2
Street Tree Needed	2
Maintenance Needed	1
Swimming Pool Enclosure Needed	1
Vision Clearance	1
Parking in Fire Lane	1
Residential Parking Complaint	1

Total Parking Citations from 5-25-17 to 7-5-17	
$5 Meter Violations, 2 hour limit, etc.	171 (YTD appr. 638)
$25 Restricted Parking, Loading Zone, etc.	1

SILVERTON POLICE ACTIVITY REPORT

Apr-17

CITATIONS	April	YTD
Traffic Crimes		
DUII	3	8
DWS-Misd./Felony Level		8
Traffic Violations		
All Other	115	390
Violations		
MIP Alcohol		2
MIP Tobacco	4	7
PCS Marijuana	8	15
Civil Infractions		
Dogs-Noise/Leash/Vicious		1
TOTAL CITATIONS ISSUED	130	445

ARRESTS	April	YTD
Arson		
Assault/including Attempted	4	15
Burglary (Including Attempts)	1	3
Drug	7	26
Forgery/Fraud/Counterfeit	1	3
Juv-Curfew		1
Runaway		1
Kidnap	1	1
Liq-Furnishing		
Menacing (Incl. Dom. Viol.)	2	2
Murder/Criminal Death		
Rape		
Robbery		1
Sex Crimes-Other		4
Stalking		
Theft(Including Attempts)	8	21
Trespassing		2
UUMV (Including Attempt)	1	3
Vandalism	1	8

Arrests (cont.)	April	YTD
Viol. Court Orders	2	6
Weapons Violations	1	3
Misc./Other Crimes	23	112
TOTAL ARRESTS	52	212
ADULT ARRESTS	48	183
JUVENILE ARRESTS	4	29

OFFENSES	April	YTD
Arson		
Auto Theft (Incl. Attempt)	10	22
Burglary in Dwelling	5	14
Burglary in Business/Other		
Deaths-Natural		1
Suicide (Inc. Attemps)	3	11
Disturbance	4	23
Family Disturbance	12	36
Fraud/Neg. Bad Check	1	6
Harassment	9	25
Ordinance Violations	14	37
Prowler/Trespass	11	32
Rape		
Robbery (Incl. Attemps)		
Runaway	2	12
Sex Crimes	3	4
Shoot Driveby/Shots Fired	1	1
Stalking		1
Theft (Incl. Attempt)	17	61
Weapons		
Vandalism	6	19
Misc./Other Offenses	633	2322
TOTAL OFFENSES	731	2627

3 Year Comparison to Date	2015	2016	2017
Burglary (Dwelling)	16	4	14
Burglary (Bus/Other)			
Arson			
Rape			
Robbery			
Theft UUMV (Theft of MV)	1	2	22
Vandalism	19	5	19
CALLS FOR SERVICE	1745	1893	2627
TOTAL ARRESTS	134	113	212
TOTAL CITATIONS	274	363	445

SILVERTON POLICE ACTIVITY REPORT

May-17

CITATIONS	May	YTD
Traffic Crimes		
DUII	1	9
DWS-Misd./Felony Level	2	10
Traffic Violations		
All Other	138	528
Violations		
MIP Alcohol	2	4
MIP Tobacco	1	8
PCS Marijuana	5	20
Civil Infractions		
Dogs-Noise/Leash/Vicious	1	2
TOTAL CITATIONS ISSUED	150	595

ARRESTS	May	YTD
Arson		
Assault/including Attempted		15
Burglary (Including Attempts)		3
Drug	5	31
Forgery/Fraud/Counterfeit		3
Juv-Curfew		1
Runaway	2	3
Kidnap		1
Liq-Furnishing		
Menacing (Incl. Dom. Viol.)		2
Murder/Criminal Death		
Rape	2	2
Robbery		1
Sex Crimes-Other	4	8
Stalking		
Theft(Including Attempts)	2	22
Trespassing	1	3
UUMV (Including Attempt)	1	4
Vandalism		8

Arrests (cont.)	May	YTD
Viol. Court Orders		6
Weapons Violations		3
Misc./Other Crimes	21	133
TOTAL ARRESTS	37	249
ADULT ARRESTS	29	212
JUVENILE ARRESTS	8	37

OFFENSES	May	YTD
Arson		
Auto Theft (Incl. Attempt)	3	25
Burglary in Dwelling	1	15
Burglary in Business/Other		
Deaths-Natural		1
Suicide (Inc. Attemps)	1	12
Disturbance	12	35
Family Disturbance	10	46
Fraud/Neg. Bad Check		6
Harassment	6	31
Ordinance Violations	15	52
Prowler/Trespass	14	46
Rape	1	1
Robbery (Incl. Attemps)		
Runaway	8	20
Sex Crimes	5	9
Shoot Driveby/Shots Fired		1
Stalking	1	2
Theft (Incl. Attempt)	24	85
Weapons		
Vandalism	6	25
Misc./Other Offenses	661	2983
TOTAL OFFENSES	767	3394

3 Year Comparison to Date	2015	2016	2017
Burglary (Dwelling)	16	4	18
Burglary (Bus/Other)			
Arson			
Rape			2
Robbery			
Theft UUMV (Theft of MV)	1	2	26
Vandalism	19	5	25
CALLS FOR SERVICE	1745	1893	3394
TOTAL ARRESTS	134	113	249
TOTAL CITATIONS	274	363	595

From: Kevin Hill
To: Lisa Figueroa
Subject: Eugene Field Site Comment
Date: Saturday, July 15, 2017 9:46:32 PM

Hello,

I just wanted to submit my support for developing the new police station/city hall on the Eugene Field site. I would especially support doing this with some added green space.

Thanks!

Kevin Hill
318 Adams Ave.
Silverton, OR 97381

From:	Kyle Palmer
To:	Lisa Figueroa
Subject:	Fwd: E.F. School site
Date:	Saturday, July 15, 2017 2:53:14 PM

Sent from my iPhone 7plus

Begin forwarded message:

From: Chris Schwab <csilverton@earthlink.net>
Date: July 15, 2017 at 11:23:52 AM PDT
To: kpalmer@silverton.or.us
Subject: E.F. School site
Reply-To: Chris Schwab <csilverton@earthlink.net>

I am totally in support of utilizing the school site for the construction of a new police station/City Hall. I understand it will probably mean tearing the grand old building down, but I think local use like this will be the best way to preserve its history. I, for one, LIKE the idea of the arbiters our safety located in the midst of our town, supplying us with a real community presence. I have confidence that the planners will explore the possibility of mixed use and public/park space as well.

I know one consideration is the loss of potential commercial space....I'm sorry, but I don't see the need for isolating a big chunk of land for development that may or may not happen. How much available commercial space is there now? And the potential for expansion seems to lie in other directions of the city, as we have seen with MAPS and the new Tap Room. Not to mention the marijuana shop....I have lived in this town too long to not notice the small businesses that open up and are gone in a year or two. I imagine a study on the perceived commercial growth of Silverton might be valuable and might give me pause. Not sure, tho, if they are as reliable as some traffic studies.

Thanks for the time for my 2 cents worth! I love Silverton and I respect our Mayor and the members of our City Council and I know the decisions they make will be well thought out and for the best of the City.

Chris Schwab
503-873-4529
Silverton, Oregon

From: Kyle Palmer
To: Lisa Figueroa
Subject: Fwd: Eugene Field for Police Station
Date: Sunday, July 16, 2017 10:57:49 PM

Sent from my iPhone 7plus

Begin forwarded message:

From: fiver1007@comcast.net
Date: July 16, 2017 at 10:22:07 PM PDT
To: kpalmer@silverton.or.us
Subject: Eugene Field for Police Station

Dear Mayor Palmer,

I am sending you this email in support of the City Council voting to select the Eugene Field site as a future location for the Silverton Police. I believe this site would provide an excellent location for a new Silverton Police Station and even a future city hall - even better if it is possible to repurpose the existing building rather than tearing it down.

Eugene Field is centrally located in our city and will provide the police with a presence on Water and 1st streets. This will benefit speed limit compliance and provide citizens and businesses good access to the police. The location is near many of the downtown businesses, providing increased visibility to residents and visitors which should have a positive influence on crime management. Sustaining the proximity of the police to the heart of the city is important in a community of our size to retain the spirit of engagement and involvement fostered by the police being a central part of the city landscape.

Thank you for the opportunity to weigh in as a resident of Silverton.
-Kathryn Wilk

From: SANDY SANFORD
To: Lisa Figueroa; Kyle Palmer
Subject: Eugene Field Property use
Date: Monday, July 17, 2017 10:36:12 AM

To the Silverton City Councilors:

What better use to make of the Eugene Field property? Right now this is a gaping hole between the two main north/south streets through downtown Silverton and most of that street frontage has become commercial. Here we can have control over what that space will look like so let's take advantage of this opportunity. It makes common sense.

Thanks for voting "Yes, let's do it"

Sandy Sanford

From: Kyle Palmer
To: Lisa Figueroa
Subject: Fwd: Eugene Field
Date: Monday, July 17, 2017 11:27:56 AM

Sent from my iPhone 7plus

Begin forwarded message:

> **From:** Ralph Amstutz <ramstut@gmail.com>
> **Date:** July 17, 2017 at 10:24:47 AM PDT
> **To:** kpalmer@silverton.or.us
> **Subject: Eugene Field**
>
> Council do not pass this purchase up. VOTE YES to purchase. Best chance to keep center of Silverton Alive.
>
> Ralph Amstutz

From: Allison Hill
To: Lisa Figueroa
Subject: Eugene Field Location
Date: Monday, July 17, 2017 12:37:48 PM

Hello,
I am writing to voice my support for a new police station/city hall and possible park at the Eugene Field site.

Thanks,
Allison Hill
318 Adam Ave