

City of Red Lodge

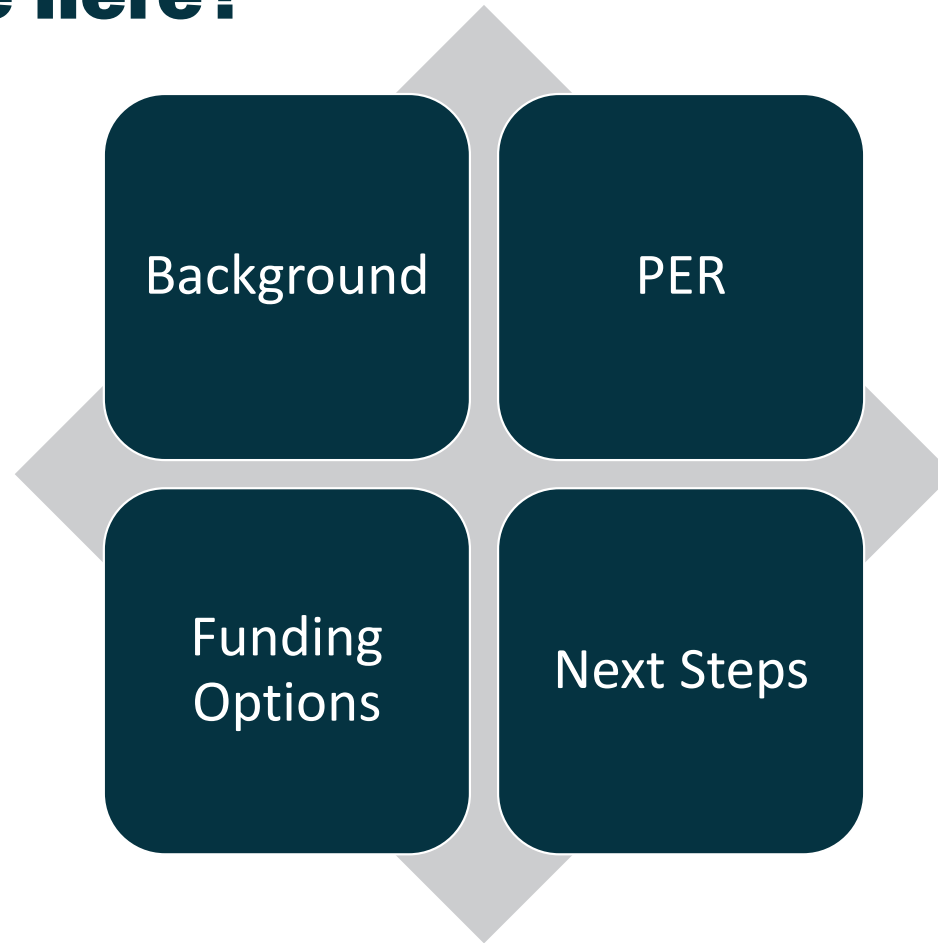


Stormwater Preliminary Engineering Report (PER) - update

Brandon Duffey, PE



Why are we here?



2017

- City Identified Need
- Decided to analyze overall storm system

2018

- Completed analysis of existing system
- Completed PER
- June 2018 – Submitted TSEP application

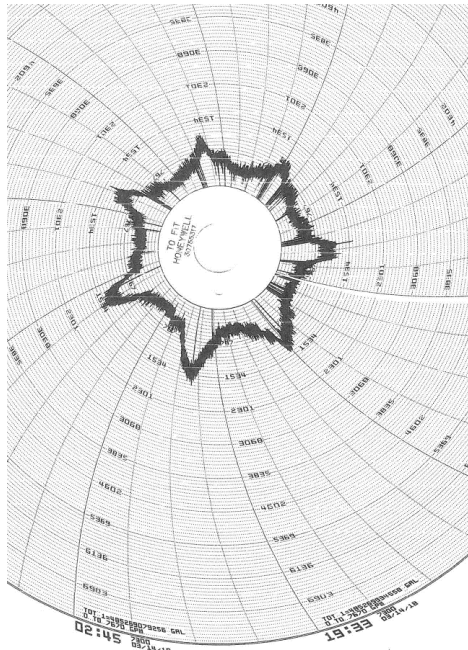
2019

- HB 652 - \$500K Grant
- Worked to meet startup conditions

2020

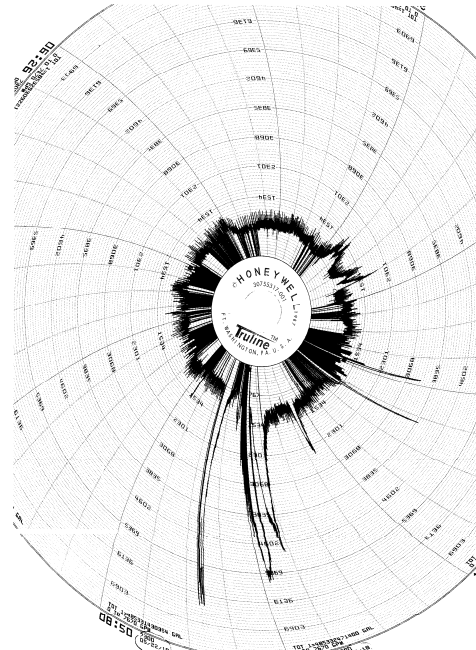
- Notified HB 652 out of money
- City decides to resubmit Phase 1 for TSEP 2020

Deficiencies



T. INFLEUNT

Influent (3/14/18)



INFLEUNT

Influent (5/22/18)

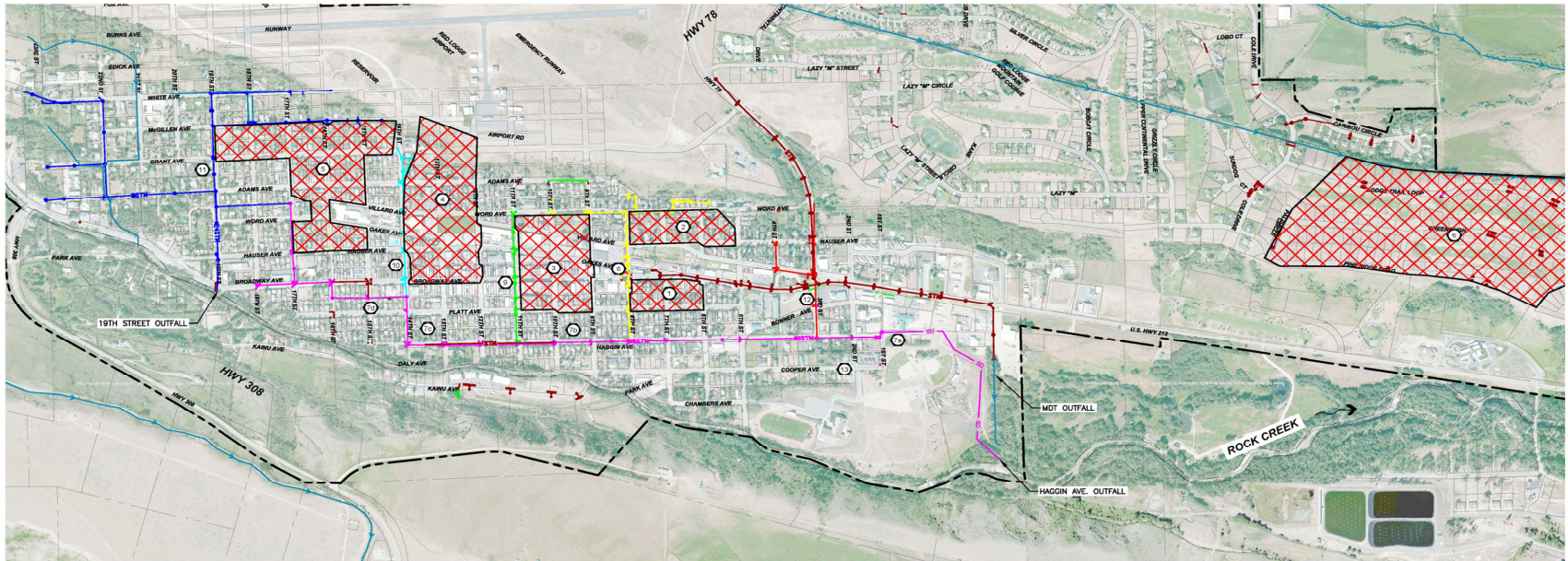
Cross Connections to Sanitary Sewer

Existing Infrastructure Undersized

Localized Flooding

General Maintenance Issues

Identified Problem Areas



LEGEND	
①	SITE ID OF IDENTIFIED PROBLEM AREAS
—	RED LODGE CITY LIMITS
—	HAGGIN AVE. STORM MAINS
—	3RD ST. STORM MAINS
—	8TH ST. STORM MAINS
—	11TH ST. STORM MAINS
—	14TH ST. STORM MAINS
—	19TH ST. STORM MAINS
—	OTHER STORM WATER FACILITIES
—	DRAINS TO SANITARY SEWER
—	IRRIGATION/DRAINAGE DITCH

A:\2-17103 - Red Lodge - City 2017\10 IS - Stormwater PFR Update\CADD 2-17103-1015\Exhibit\FER_2-17103-1015-FR-10.dwg of problem areas.dwg

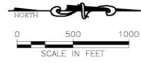
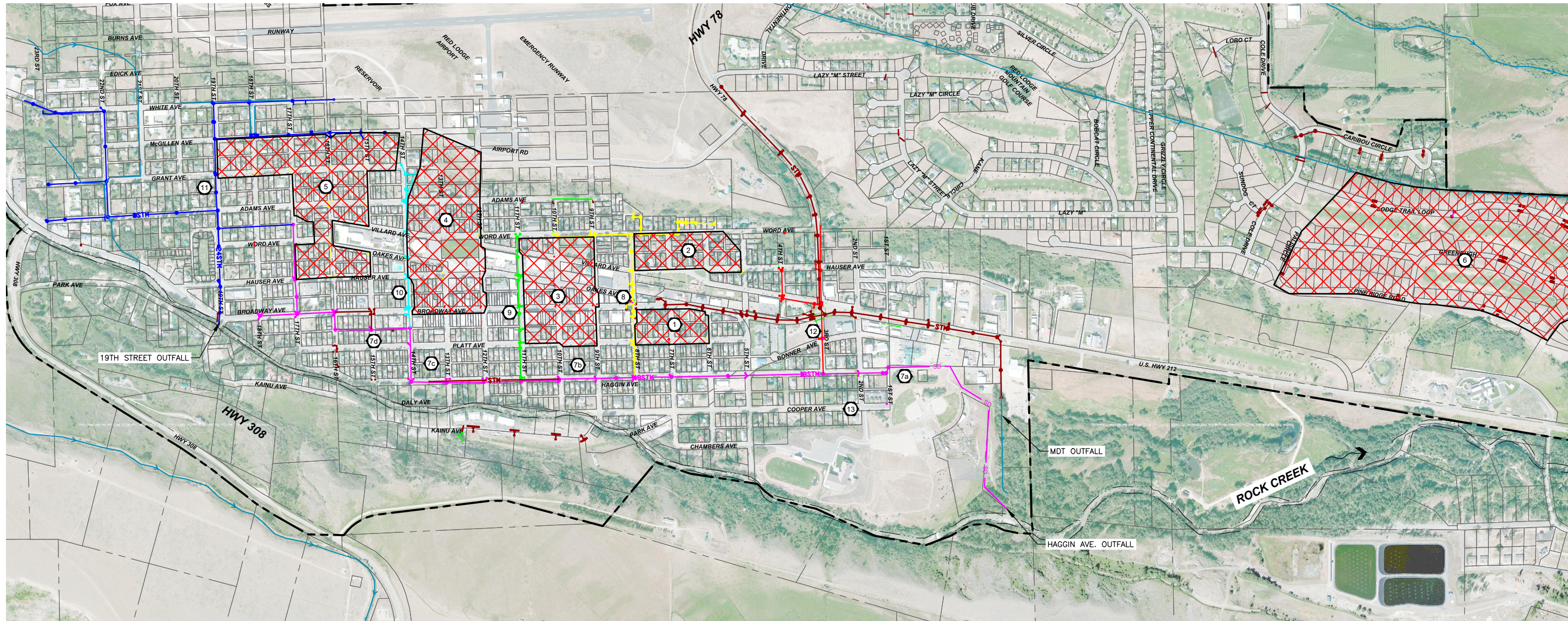


Figure #8
ID OF PROBLEM AREAS
 CITY OF RED LODGE
 2020 STORMWATER IMPROVEMENTS PER

J:\2-17103 - Red Lodge On-Call 2017\TO 15 - Stormwater PER Update\CADD_2-17103-TO15-Exhibits\PER_2-17103-TO15-PER-ID of problem areas.dwg



LEGEND

	SITE ID OF IDENTIFIED PROBLEM AREAS
	RED LODGE CITY LIMITS
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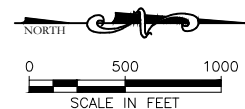
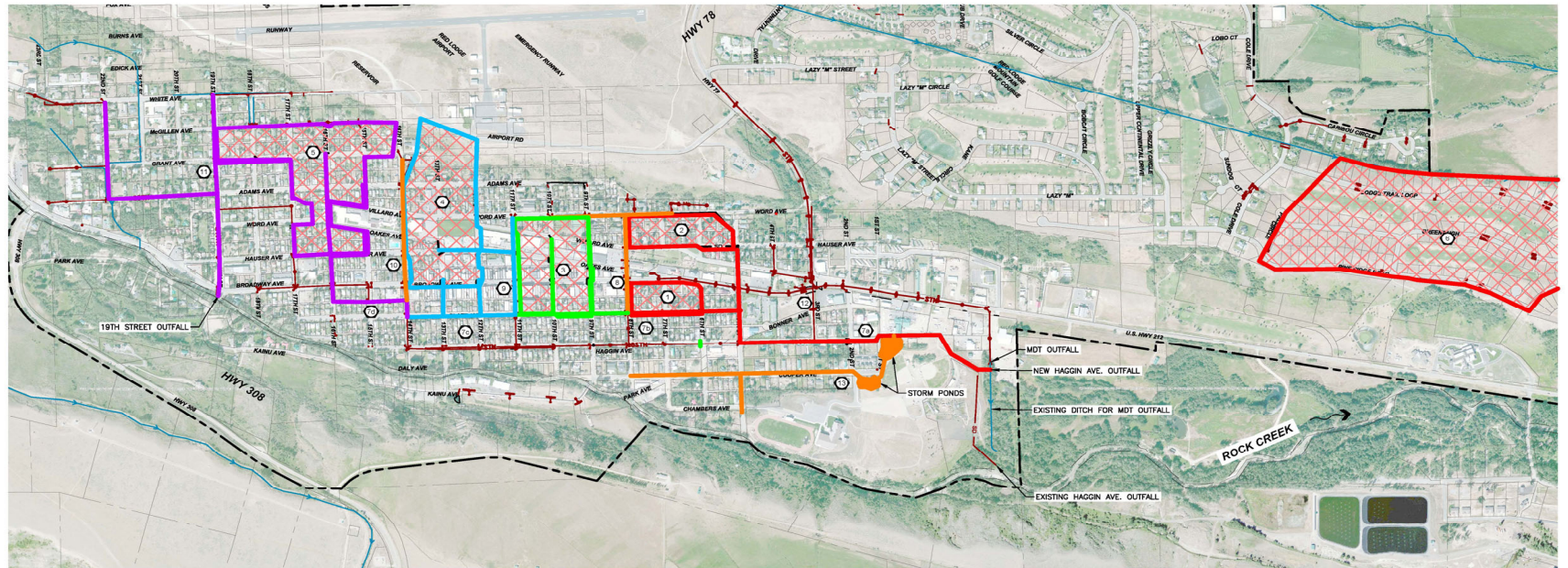


Figure #8
ID OF PROBLEM AREAS
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Preferred Alternative

PRIORITY /PHASE	SITE ID	AREA	EXISTING STRUCTURE TYPE	EXISTING SIZE	DESCRIPTION	TYPE OF IMPROVEMENT	PROPOSED STRUCTURE TYPE	PROPOSED SIZE	ESTIMATED TOTAL COST
PHASE 1									
1	1	6th St. to 8th St. & Platt to Broadway	N/A	N/A	Drainage basin drains to sanitary sewer	New Storm Infrastructure	PVC or HDPE	18"	\$145,095
1	2	5th St. to 8th St. & Hauser to Word	N/A	N/A	Drainage basin drains to sanitary sewer	New Storm Infrastructure	PVC or HDPE	15"	\$503,265
1	7a	Haggin Ave: Outfall to 5th St., Platt 5th to 8th	PVC/Vitrified Clay pipe	24" & 18"	Main is undersized	Replace existing main, New main along Platt, add additional inlets	PVC or HDPE	42", 48" & 54"	\$2,012,535
1	6	Diamond C Estates Subdivision	N/A	N/A	Potential for some storm inlets to be tied into sanitary sewer system.	Further Investigation	PVC or HDPE	TBD	\$11,087
									Phase 1 Total: \$2,671,982
PHASE 2									
2	3	9th St. to 11 St. & Platt to Word	N/A	N/A	Drainage basin drains to sanitary sewer	New Storm Infrastructure	PVC or HDPE	18"	\$749,183
2	7b	Platt Ave: 8th St. to 11th St.	PVC/Vitrified Clay pipe	18"	Main is undersized	New main in Platt, add additional inlets	PVC or HDPE	42"	\$570,706
									Phase 2 Total: \$1,319,889
PHASE 3									
3	4	12th St. to 14th St. & Broadway to top of hill/airport rd.	N/A	N/A	Drainage basin drains to sanitary sewer	New Storm Infrastructure	PVC or HDPE	15"	\$511,040
3	7c	Platt Ave: 11th St. to 14th St.	PVC/Vitrified Clay pipe	15"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	36"	\$542,669
3	9	11th St.: Platt to Word	PVC/Vitrified Clay pipe	12"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	24" & 15"	\$558,765
									Phase 3 Total: \$1,612,474
PHASE 4									
4	5	15th St. to 17th St./Hauser to Grant & 14th St. to 19th St./Grant to McGillen	N/A	N/A	Drainage basin drains to sanitary sewer	New Storm Infrastructure	PVC or HDPE	24" & 18"	\$1,045,470
4	7d	14th St.: Platt to Alley, Alley: 14th St. to 16th St., & 16th St.: alley to Broadway	PVC/Vitrified Clay pipe	15" & 12"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	36" & 30"	\$602,475
4	11	19th St Storm Main System	PVC/Vitrified Clay pipe	24" & 8"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	36", 30", & 18"	\$1,301,765
									Phase 4 Total: \$2,949,711
FUTURE PROJECTS									
F	8	8th St.: Platt to Word, & Word: 10th to 7th	PVC/Vitrified Clay pipe	12" & 8"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	24", 18", & 15"	\$990,641
F	10	14th St.: 7d improvements to Grant	PVC/Vitrified Clay pipe	12"	Main is undersized	Replace existing main, add additional inlets	PVC or HDPE	15"	\$687,287
F	13	Cooper Ave: 9th St. to 1st St.	N/A	N/A	no storm infrastructure	New Mains, Inlets, stormwater pond	PVC or HDPE	24"	\$319,346
									Future Projects Total: \$1,997,273

Proposed Phasing



LEGEND	
	SITE ID OF IDENTIFIED PROBLEM AREAS
	RED LODGE CITY LIMITS
	PHASE 1 IMPROVEMENTS
	PHASE 2 IMPROVEMENTS
	PHASE 3 IMPROVEMENTS
	PHASE 4 IMPROVEMENTS
	FUTURE PHASE(S) IMPROVEMENTS

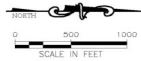
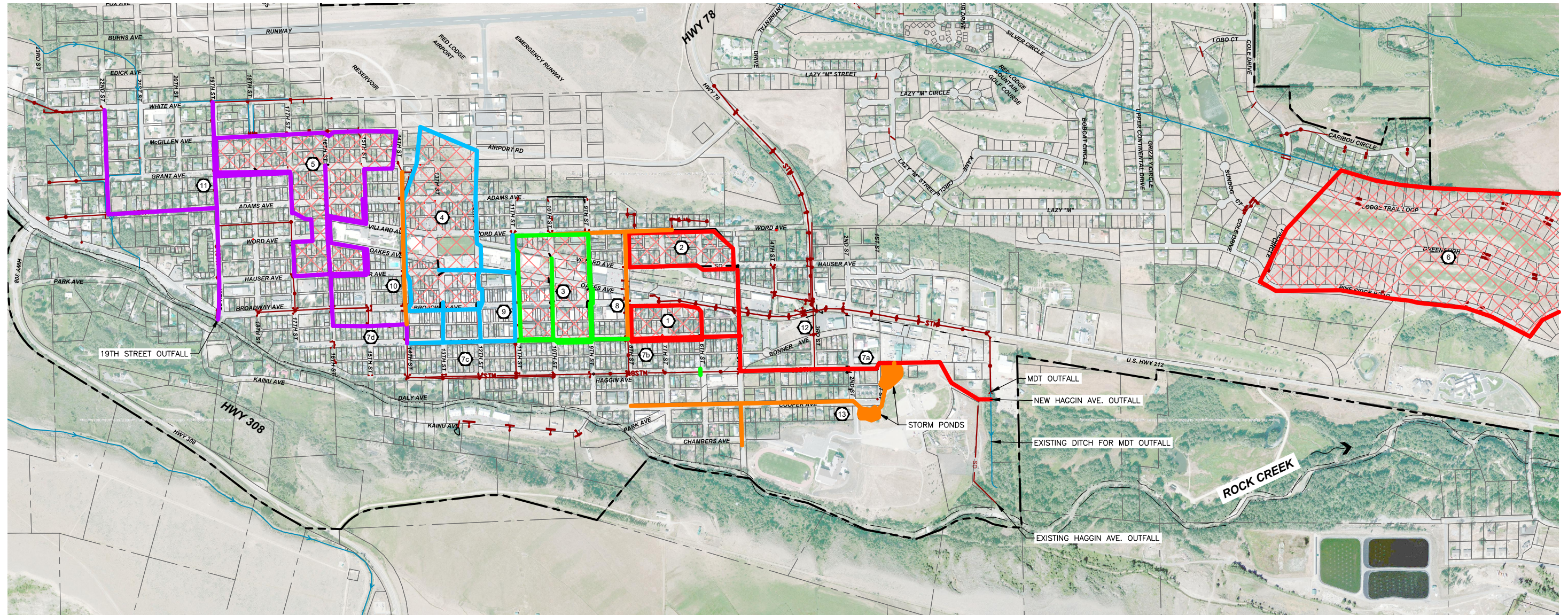


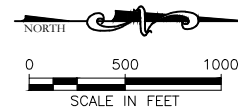
Figure #17
PHASING OF PROPOSED IMPROVEMENTS
 CITY OF RED LODGE
 2020 STORMWATER IMPROVEMENTS PER



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—	PHASE 1 IMPROVEMENTS
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—	PHASE 4 IMPROVEMENTS
—	FUTURE PHASE(S) IMPROVEMENTS

Figure #17
PHASING OF PROPOSED IMPROVEMENTS

CITY OF RED LODGE
 2020 STORMWATER IMPROVEMENTS PER



Funding Scenarios

ITEM	PHASE 1	PHASE 1	PHASE 1	PHASE 1
	TSEP and RD Loan only (3.125% for 40 years*)	TSEP and SRF (2.5% for 20 years)	SRF Only (2.5% for 20 years)	RD Loan only (3.125% for 40 years*)
Project Total	\$2,671,982	\$2,671,982	\$2,671,982	\$2,671,982
Rounded Total	\$2,672,000	\$2,672,000	\$2,672,000	\$2,672,000
TSEP Grant	\$500,000	\$500,000		
SRF Loan		\$2,172,000	\$2,672,000	
RD Loan	\$2,172,000			\$2,672,000
Total Project Funds	\$2,672,000	\$2,672,000	\$2,672,000	\$2,672,000
SRF Bond Reserve (1/2 year payment)	\$0	\$69,721	\$63,861	\$0
Total Loan Amount	\$2,172,000	\$2,241,721	\$2,735,861	\$2,672,000
Annual Loan Payment	\$77,840	\$143,920	\$175,650	\$95,760
Total Loan Payments Over Life of Loan	\$3,113,600	\$2,878,400	\$3,513,000	\$3,830,400
Total Interest Paid Over Life of Loan	\$941,600	\$636,679	\$777,139	\$1,158,400
Annual Loan Coverage	\$7,784	\$14,392	\$17,565	\$9,576
TOTAL ANNUAL CAPITAL DEBT SERVICE COST	\$85,624	\$158,312	\$193,215	\$105,336
<i>User Capital Cost/Month</i>	\$3.43	\$6.34	\$7.73	\$4.22
Annual O&M for Storm Utility	\$50,000	\$50,000	\$50,000	\$50,000
Storm Utility Administration Fee	\$15,000	\$15,000	\$15,000	\$15,000
Storm Utility Reserve	\$20,000	\$20,000	\$20,000	\$20,000
TOTAL ANNUAL O&M COSTS to NEW USERS	\$85,000	\$85,000	\$85,000	\$85,000
<i>New User O&M Cost/Month</i>	\$3.40	\$3.40	\$3.40	\$3.40
USER COST/MONTH FOR STORM UTILITY	\$6.83	\$9.74	\$11.14	\$7.62
Existing Average User Cost/Month/EDU	\$0.00	\$0.00	\$0.00	\$0.00
COST/MONTH INCREASE/EDU	\$6.83	\$9.74	\$11.14	\$7.62
Existing Other System Cost/Month	\$91.00	\$91.00	\$91.00	\$91.00
Total Proposed Water/Sewer/Storm Cost/Month	\$97.83	\$100.74	\$102.14	\$98.62
Combined Systems Target Rate	\$81.46	\$81.46	\$81.46	\$81.46
PERCENT OF COMBINED TARGET RATE	120.1%	123.7%	125.4%	121.1%

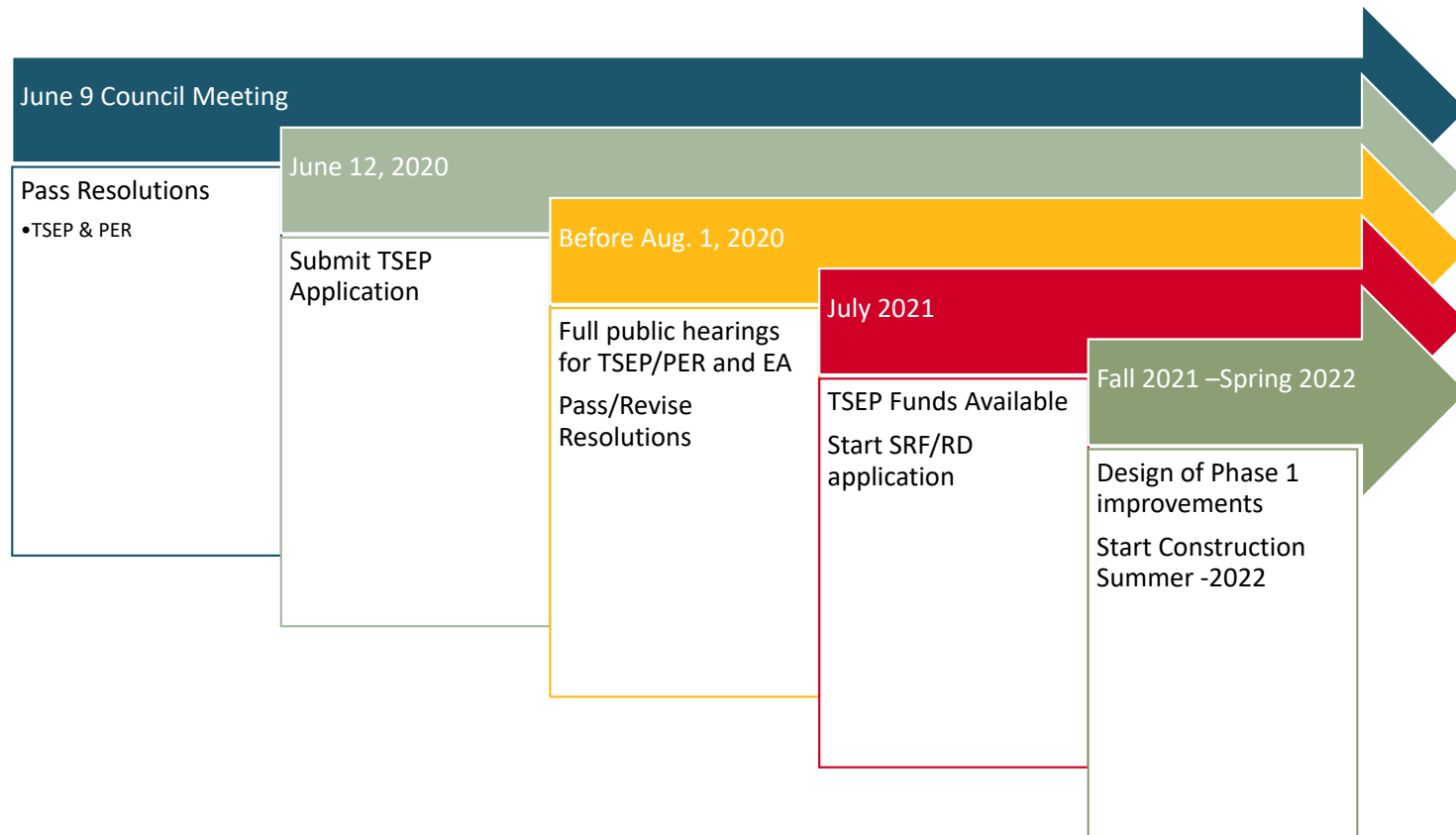
EDU is based on number of lots within the City boundary

The stormwater infrastructure is currently operated out of the general fund. The City does not have assessments/funds specifically ge

Funding Strategy

- **Project Options:**
 - Phase 1 Only
- **Most likely grant source:**
 - TSEP Grant \$500,000
- **Rate increase dependent on final project and funding package received**

Project Schedule



Questions?

