

Fire protection: RFD base including trucks, equipment
12.1.14

assumptions:

100% of these infrastructure costs are currently borne by RFD (ie entire town via RFD budget)

\$533,403	current RFD budget
\$321	avg parcel cost (1661 parcels)
\$213	tax payment for \$200,000 house <i>includes</i>
\$75,000	current annual payments for RFD fire trucks (\$375,000-\$415,000 per engine)
\$45	avg parcel cost (1661 parcels)
\$30	tax payment for \$200,000 house
\$3,006	current annual payments for RFD use of water note: water from hydrants is not metered thus no charge; other costs such as hydrant maintenance and plowing are charged to all WS users
\$1.81	avg parcel cost (1661 parcels)
\$1.20	tax payment for \$200,000 house

notes:
The Richmond Fire Department currently has three engines, purchased in 2011, 2001 and 1994. The fire engines are programmed for a 20 year replacement cycle.
20 year cycle: 2015, 2021, 2031)

Fire protection: Richmond water infrastructure including lines, hydrants, maintenance
12.1.14

assumptions:

Fire infrastructure represents app. 5% of current water system infrastructure costs

The costs of fire infrastructure in the water system would be paid by RFD (ie entire town via RFD budget)

proposed payments

\$291,519	current water budget
\$3,006	current RFD water payments \$
1.03%	current RFD water payments %
	note: water from hydrants is not metered thus no charge; other costs such as hydrant maintenance and plowing are charged to all WS users
\$1.81	current avg annual parcel cost (1661 parcels)
\$1.20	current annual tax payment for \$200,000 house
\$14,576	proposed RFD water payments \$
5.00%	proposed RFD water payments %
\$11,570	proposed increase
\$8.78	proposed avg parcel cost
\$6.97	proposed increase per parcel
\$5.83	proposed payment per \$200,000 house
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**Fire protection: Richmond water infrastructure in new tank
11.25.14**

assumptions:

<u>gals</u>	<u>%</u>	
130,000	17.1%	100% of daily demand capacity paid by users (via rates)
252,000	33.2%	40% of fire protection capacity paid by users (via rates) based on relative value to users
378,000	49.7%	60% of fire protection capacity paid by town <u>including users</u> (via RFD rates) based on relative value to entire town
<u>760,000</u>		TOTAL

proposed payments

<u>gals</u>	<u>% of gals</u>	<u>ast. annual</u> <u>bond payments</u>	<u>574</u> <u>est. annual</u> <u>avg per user</u>	<u>1661</u> <u>est. annual</u> <u>avg per parcel</u>	<u>est. annual</u> <u>cost per \$200k house</u>
130,000	17.1%	\$7,746	\$13.49	<i>na</i>	<i>included below</i>
252,000	33.2%	\$15,016	\$26.16	<i>na</i>	<i>na</i>
378,000	49.7%	\$22,523	\$0.00	\$13.56	\$9.01
<u>760,000</u>	<u>100.0%</u>	<u>\$45,285</u>	<u>\$39.65</u>	<u>\$13.56</u>	<u>\$9.01</u>

Summary

\$22,762	est. annual increase in water system user rates (as % of tank costs)
\$39.65	est. average increased annual payment per water system user (EU)
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notes:

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Opinion of Probable Total Project Cost and User Cost for Tank Project

Richmond Village Infrastructure Rehabilitation Project

New Water Storage Tank - Average Daily Demand and Fire Capacity 11/25/14

Description	Current 50 yr ADD Est. plus 630K gal. fire flow = 760,000 gallon tank
<u>Opinion of Total Project Cost for New Tank</u>	\$1,184,351
VT DWSRF Funding**: A. Yearly Cost per EU* @ -0.7% for 30 years Est. Annual Loan Payment of \$24,738	\$43
VMBB Funding (for \$ not in DWSRF)***: C. Yearly Cost per EU* @ 4% for 30 years Est. Annual Loan Payment of \$20,547	\$36
	Total: <hr style="display: inline-block; width: 100px; border: 1px solid black; vertical-align: middle;"/> \$79



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** = 70% of Total Project Cost

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Green Mountain Engineering, Inc.

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KC, 11.25.14

<u>Item</u>	<u>Total Cost</u>	<u>% Water</u>	<u>Water Cost</u>	<u>% Fire</u>	<u>Fire Cost</u>
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Repair kits	\$3,960	10	\$396	90	\$3,564
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Labor(2hr/wk)	\$3,120	25	\$500	75	\$2,620
Snow removal(20 storms)	\$4,800	100	\$0	100	\$4,800
TOTAL	\$97,590	11%	\$10,673	89%	\$86,917

Piping value	30,800 total feet minus 10,200 feet water service only = 20,600 fire mains				
	Current pipe cost = \$3.68/ft for 4" PVC.				
	Current pipe cost = \$12.31/ft for 8" PVC.				
Current value in pipe extra cost for fire protection = \$8.63 X 20,600					\$177,778.00
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KC, 11.25.14

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Items in the Water Department related to the Fire Service Fee

KC, 11.25.14

<u>Item</u>	<u>Total Cost</u>	<u>% Water</u>	<u>Water Cost</u>	<u>% Fire</u>	<u>Fire Cost</u>
Hydrants (33)	\$82,500	10	\$8,250	90	\$74,250
Marker Flags	\$1,320	10	\$132	90	\$1,188
Repair kits	\$3,960	10	\$396	90	\$3,564
Paint	\$180	10	\$18	90	\$162
Grease	\$120	10	\$12	90	\$108
Wrench	\$90	100	\$90	-	\$0
Flow Control Valve	\$35	100	\$35	-	\$0
Adapters	\$150	100	\$150	-	\$0
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Backflow Preventer	\$700	100	\$700	-	\$0
Signage	\$100	100	\$100	-	\$0
Pump	\$175	-	\$0	100	\$175
Antifreeze	\$50	-	\$0	100	\$50

Labor(2hr/wk)	\$3,120	25	\$500	75	\$2,620
Snow removal(20 storms)	\$4,800	100	\$0	100	\$4,800
TOTAL	\$97,590	11%	\$10,673	89%	\$86,917

Piping value	30,800 total feet minus 10,200 feet water service only = 20,600 fire mains				
	Current pipe cost = \$3.68/ft for 4" PVC.				
	Current pipe cost = \$12.31/ft for 8" PVC.				
Current value in pipe extra cost for fire protection = \$8.63 X 20,600					\$177,778.00
	\$275,368		\$10,673		\$264,695

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Fire protection: RFD base including trucks, equipment
12.1.14

assumptions:

100% of these infrastructure costs are currently borne by RFD (ie entire town via RFD budget)

\$533,403	current RFD budget
\$321	avg parcel cost (1661 parcels)
\$213	tax payment for \$200,000 house <i>includes</i>
\$75,000	current annual payments for RFD fire trucks (\$375,000-\$415,000 per engine)
\$45	avg parcel cost (1661 parcels)
\$30	tax payment for \$200,000 house
\$3,006	current annual payments for RFD use of water note: water from hydrants is not metered thus no charge; other costs such as hydrant maintenance and plowing are charged to all WS users
\$1.81	avg parcel cost (1661 parcels)
\$1.20	tax payment for \$200,000 house

notes:
The Richmond Fire Department currently has three engines, purchased in 2011, 2001 and 1994. The fire engines are programmed for a 20 year replacement cycle.
20 year cycle: 2015, 2021, 2031)

Fire protection: Richmond water infrastructure including lines, hydrants, maintenance
12.1.14

assumptions:

Fire infrastructure represents app. 5% of current water system infrastructure costs

The costs of fire infrastructure in the water system would be paid by RFD (ie entire town via RFD budget)

proposed payments

\$291,519	current water budget
\$3,006	current RFD water payments \$
1.03%	current RFD water payments %
	note: water from hydrants is not metered thus no charge; other costs such as hydrant maintenance and plowing are charged to all WS users
\$1.81	current avg annual parcel cost (1661 parcels)
\$1.20	current annual tax payment for \$200,000 house
\$14,576	proposed RFD water payments \$
5.00%	proposed RFD water payments %
\$11,570	proposed increase
\$8.78	proposed avg parcel cost
\$6.97	proposed increase per parcel
\$5.83	proposed payment per \$200,000 house
\$4.63	proposed increase per \$200,000 house

**Fire protection: Richmond water infrastructure in new tank
11.25.14**

assumptions:

<u>gals</u>	<u>%</u>	
130,000	17.1%	100% of daily demand capacity paid by users (via rates)
252,000	33.2%	40% of fire protection capacity paid by users (via rates) based on relative value to users
378,000	49.7%	60% of fire protection capacity paid by town <u>including users</u> (via RFD rates) based on relative value to entire town
<u>760,000</u>		TOTAL

proposed payments

<u>gals</u>	<u>% of gals</u>	<u>ast. annual</u> <u>bond payments</u>	<u>574</u> <u>est. annual</u> <u>avg per user</u>	<u>1661</u> <u>est. annual</u> <u>avg per parcel</u>	<u>est. annual</u> <u>cost per \$200k house</u>
130,000	17.1%	\$7,746	\$13.49	<i>na</i>	<i>included below</i>
252,000	33.2%	\$15,016	\$26.16	<i>na</i>	<i>na</i>
378,000	49.7%	\$22,523	\$0.00	\$13.56	\$9.01
<u>760,000</u>	<u>100.0%</u>	<u>\$45,285</u>	<u>\$39.65</u>	<u>\$13.56</u>	<u>\$9.01</u>

Summary

\$22,762	est. annual increase in water system user rates (as % of tank costs)
\$39.65	est. average increased annual payment per water system user (EU)
\$22,523	est. increased annual costs in RFD budget (as % of tank costs)
\$13.56	est. increased annual avg cost per parcel (note: all parcels, including users and nonusers, pay RFD costs)
\$9.01	est. increased annual avg cost per \$200,000 house (non user)
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notes:

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Opinion of Probable Total Project Cost and User Cost for Tank Project

Richmond Village Infrastructure Rehabilitation Project

New Water Storage Tank - Average Daily Demand and Fire Capacity 11/25/14

Description	Current 50 yr ADD Est. plus 630K gal. fire flow = 760,000 gallon tank
<u>Opinion of Total Project Cost for New Tank</u>	\$1,184,351
VT DWSRF Funding**: A. Yearly Cost per EU* @ -0.7% for 30 years Est. Annual Loan Payment of \$24,738	\$43
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KC, 11.25.14

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