San Pareil
Water Service Area
System Upgrades

May 26 2011
Purpose of tonight’s meeting

To discuss options for upgrading the San Pareil Water Service Area infrastructure and fire flow capabilities
Residents approved the RDN takeover of the water system from Bubbling Springs in 2000

Borrowing bylaw established for system improvements

Substandard fire flow was identified at that time but residents did not wish to proceed due to costs

Borrowed funds utilized for piping improvements, Maple Lane main replacement and a new well
Why are improvements needed?

Pipe Life Span
90% of the system piping was installed prior to 1976. Asbestos cement piping has a life of approximately 50 yrs. Replacement in the next 15 to 20 years may be necessary.

Pump station
Very old equipment, breaks down frequently. Cannot continue to rebuild essential components. The pump station replacement is a priority.
Why are improvements needed?

Reservoir
The existing reservoir holds 69,000 gallons. Recommended fire flow standards require storage for 885 gallons per minute for 90 minutes. That equals 79,650 gallons.

While this is about 13% below the recommended standard it is acceptable for the existing number of connections given the existing pumping capacity of the wells.

However, any additional demand on the system, including additional connections, would require expansion of the reservoir.

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Why are improvements needed?

Fire Flow Capacity

Currently less than 40% of RDN standard flow requirements for new subdivisions
## Improvements – Cost Summary

2011 Dollars

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Station</td>
<td>$400,000</td>
</tr>
<tr>
<td>Reservoir (to meet stds)</td>
<td>$214,000</td>
</tr>
<tr>
<td>Piping</td>
<td>$1,838,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2,452,000</strong></td>
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</tbody>
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Full System Improvements

- Includes borrowing for all improvements
- Borrowing brought on as required
- Pump Station, Reservoir and key piping upgraded first
- Fire protection for all residents after first phase of improvements
- Distribution piping improvements made gradually over 20 years
- Borrowing increases as improvements are made
Annual Borrowing Costs

Pump Station
Reservoir
Terrien Way Piping

Piping Upgrades
Over 20 Years

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Alternate Approach for Required Improvements

- Do not include the majority of the pipe replacement at this time. Repair as required. Develop a reserve and borrow in the future if required.

- Do not include the reservoir at this time. Future connections will be responsible for increasing storage.
$1,070,000

Option 1

- Includes borrowing for the Pump Station, Terrien Way piping and piping along Shorewood and San Malo Crescent to Seashell Place.
- All improvements made in the first/second year of implementation.
- Fire protection improved for all residents once this work is complete.
- Remaining distribution piping improvements removed from the immediate upgrade program.

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Annual Borrowing Costs

Option 1

- Pump Station
- Terrien Way Piping
- Piping to Seashell

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Option 1

**PROS**

- Consistent borrowing cost
- Provides improved fire protection for all service area residents
- Does not include reservoir or significant distribution piping costs

**CONS**

- More expensive than Option 2
- Does not allow for all distribution piping improvements

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$665,000

- Includes borrowing for the Pump Station and Terrien Way to Sabine Road piping only.
- All improvements made in the first/second year of implementation.
- Improved fire protection for 80% of service area residents once improvements are complete.
- Distribution piping improvements removed from the upgrade program.
Annual Borrowing Costs

Option 2

- Pump Station
- Terrien Way Piping

Please Note:
At the meeting a 10 year amortization period was reported for this option. The actual amortization period is 20 years.

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Option 2

**PROS**

- Least expensive option
- Borrowing over 20 years
- Consistent borrowing cost
- Provides fire protection for approximately 80% of service area residents
- Does not include reservoir or distribution piping costs

**CONS**

- Does not include borrowing for distribution piping improvements
- Does not provide fire protection to all residents in the service area
Summary of Options

Option 1
- Pump Station
- Terrien Way piping
- Shorewood & San Malo to Seashell piping
- $1,070,000
- $290 increase to parcel tax
- 20 year amortization
- Full fire protection coverage

Option 2
- Pump Station
- Terrien Way piping
- $650,000
- $190 increase to parcel taxes
- 20 year amortization
- 80% Fire protection coverage

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Next Steps...