

## **Long Range Planning Input** **Top 100 Segments**

PG&E has a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E monitors system status in real time on a 24-hour basis, and regularly conducts leak inspections, surveys, and patrols of all of our natural gas pipelines. Any issues identified as a threat to public safety are immediately addressed.

PG&E also uses the data it collects to help plan and prioritize future work. One of the tools PG&E uses is a risk management program that inventories each of the 20,000 segments within PG&E's natural gas transmission system and evaluates them against criteria such as:

- the potential for third party damage like dig-ins from construction,
- the potential for ground movement,
- the potential for corrosion, and
- the physical design and characteristics of the pipe segment

PG&E also considers the proximity to high density populations, potential reliability impacts and environmentally sensitive areas.

Based on all of these factors, PG&E determines which segments warrant further evaluation, monitoring or other potential future action. PG&E also creates a list of the "Top 100" segments to help inform future work plans.. As conditions change from year to year, PG&E reevaluates the segments included on the list.

There are a range of actions PG&E may take for the segments identified on the list. For example, if a segment is on the list due to a high level of construction activity in the area, PG&E might enhance the physical markings of the lines and conduct outreach to help avoid accidental dig-ins. In other cases, PG&E may increase its monitoring or propose to rebuild the line sometime in the future.

Below is PG&E's current list of segments for longer-term evaluation and planning. This list also is available on PG&E's website at [insert address], along with maps to assist customers with specific questions about the location of PG&E's natural gas transmission lines. The segments have been grouped together for planning purposes. The current ranking for each segment is also provided.

**Factor Key:**

A pipeline segment may be placed into planning for further study and long-range planning based upon its risk for one of four factors:

- **Potential for Third-Party Damage:** Third-party damage is the number one concern of PG&E pipeline damage. Indications that a pipe may be at risk for third-party damage include whether or not the line segment has a history of third party damage, the depth at which the pipe is buried, the pipe's diameter, the degree of marking available for the pipe's location, and local awareness in the immediate area of the pipeline's location. Actions PG&E would take to reduce this risk factor would include additional marking of the pipeline location (when possible), additional education in the immediate area for the 811 system to call before digging, and monitoring of construction activity and/or permits in the area around the pipeline.
- **Potential for Corrosion:** Factors include items such as: the coating design, the resistivity of the soil, and other ground-based factors which could reduce the thickness of the pipe wall. Actions PG&E would take to reduce this risk include regular and ongoing monitoring (PG&E monitors both electronically and physically, physically checking every 2 months at over 6,000 locations in its natural gas transmission system), increasing or replacing the pipe's external protective coating, or replacement of the pipe itself.
- **Potential for Ground Movement:** Factors include the proximity seismic to areas, and the potential for soil erosion around the pipeline. Actions PG&E would take to reduce this risk include improving materials of the pipe through replacement of the pipe, enhanced monitoring, or burying the pipe a greater depth beneath the ground level (for erosion prevention).
- **Physical Design and Characteristics:** Factors include items such as: the age of pipe, the type of welding performed on the pipe, the fittings used in the pipeline, and the materials used to manufacture the pipe. Actions PG&E would take to reduce this risk factor include replacement of the pipe or fittings in order to upgrade or improve the design or characteristics of the line segment.
- **Overall:** Did not score high in any one factor, but scored moderately high in more than one factor.

**Status Key:**

- **Monitoring:** PG&E engineers are monitoring and reviewing these line segments, to see if they need to be addressed through a project.
- **Initiated:** PG&E engineers have determined that the line segment merits further study and analysis, and the segments have been entered into the project management system for further review.
- **Engineering:** PG&E engineers are defining the scope of the project and readying it for construction.
- **Construction:** The project is currently under construction.
- **Complete:** The project has been completed and will come off the planning grid.

Map No.	Line Segment (Ranking)	Footage	Description	Factor	Status
1	L103, segment 117.1, Mile Points 11.00 – 11.42  L103, segment 117.5, Mile Points 11.42 – 11.65	3415'	Relocate 6 miles of pipe between [Redacted] [Redacted] near San Juan Bautista to replace two smaller segments of pipe within the larger pipeline. This section of L103 travels across the San Andreas fault line and through hillsides which are susceptible to landslides and soil erosion problems.	Potential for Ground Movement	Initiated
2	L107, segment 127.1, Mile Points 14.00 – 14.82  L107, segment 127.5, Mile Points 14.82	8493'	Evaluating the potential replacement of 13,835 feet of pipe between Livermore and Arroyo del Valle, due to the design materials used and the potential for ground movement. This section of L107 is located across the open hills from south Livermore to Arroyo del Valle.	Physical Design and Characteristics	Initiated

	<p>– 15.12</p> <p>L107, segment 127.57, Mile Points 15.13 – 15.36</p> <p>L107, segment 127.6, Mile Points 15.36 – 15.36</p> <p>L107, segment 127.7, Mile Points 15.36 – 15.70</p>				
3	<p>L107, segment 129, Mile Points 15.89 – 16.40</p> <p>L107, segment 131.5, Mile Points 17.11 – 18.00</p> <p>L107, segment 132.2, Mile Points 18.00</p>	10,707'	Evaluate the potential replacement of 14,730 feet of pipe between Arroyo del Valle and Foleys Crossover, south of Livermore from Arroyo del Valle to the Vallecitos Valley due to the design materials used and the potential for ground movement. This segment of L107 is located across the open hills south of Livermore from Arroyo del Valle to the Vallecitos Valley.	Physical Design and Characteristics	Initiated

	- 18.67				
4	L107, segment 139, Mile Points 21.07 – 22.29	6441'	Evaluate the potential replacement of 19,115 feet of pipe between Foleys Crossover and Calaveras Rd due to the potential for ground movement. This section of L107 is located across the open hills through the Vallecitos Valley to [Redacted] in Sunol.	Potential for Ground Movement	Initiated
5	L108, segment 124.6, Mile Points 12.70 – 12.72  L108, segment 125, Mile Points 12.72 – 12.76	447'	Replace 2.5 miles of pipe from [Redacted] to [Redacted] due to the design materials used. Construction was performed in 2010.	Physical Design and Characteristics	Complete
6	L108, segment 146.35, Mile Points 39.18 – 39.21  L108, segment 146.6, Mile Points 39.21 – 39.23  L108, segment	1559'	Evaluate the potential replacement of 8,000 feet of pipe through the rural area near [Redacted] near Lodi due to the design materials used and overall risk factors.	Physical Design and Characteristics	Initiated

	147, Mile Points 39.23 – 39.47				
7	L108, segment 179.5, Mile Points 62.57 – 63.29	3831'	Replace 8,900 feet of pipe through the industrial area from [Redacted] to [Redacted] in Elk Grove due to the design materials used and overall risk factors. Construction currently is planned for 2011.	Physical Design and Characteristics	Engineering
8	L109, segment 137, Mile Points 15.00 – 15.38  L109, segment 137.19, Mile Points 15.38 – 15.65  L109, segment 137.32, Mile Points 15.65 – 16.01  L109, segment 137.8, Mile Points 16.19 – 16.33	6005'	PG&E conducted an analysis of the cathodic system that protects this pipeline segment from corrosion. Based on this analysis, the system was adjusted for better protection. Analysis of the system in 2009 showed a marked improvement. Engineering will continue monitoring the segment, but no further action is contemplated at this time.	Potential for Corrosion	Under Review
9	L114, segment	5272'	PG&E is conducting an engineering review of the	Potential for	Under Review

	106, Mile Points 3.18 – 3.80  L114, segment 120, Mile Points 7.32 – 7.69		potential for ground movement along 5,272 feet of pipe near the Sacramento and San Joaquin Rivers on [Redacted]. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Ground Movement	
10	L114, segment 153.2, Mile Points 28.00 – 28.87	4675'	Evaluate the potential replacement of 7,000 feet of pipe between [Redacted] and [Redacted] located on steep slopes from the North Livermore Valley to [Redacted] due to the potential for ground movement.	Potential for Ground Movement	Initiated
11	L130, segment 101, Mile Points 0.00 – 0.50	2530'	Evaluate the potential replacement of 4,000 feet of pipe crossing the Sacramento River near [Redacted] [Redacted] due to the potential for ground movement. This section of pipeline is located [Redacted]	Potential for Ground Movement	Initiated
12	L131, segment 151, Mile Points 37.89 – 38.49	3421'	Evaluate the potential replacement of 4,990 feet of pipeline between Ruby Hills to Foleys Crossover in Livermore due to the potential for ground movement. This pipeline is located [Redacted] [Redacted]	Potential for Ground Movement	Initiated
13	L131, segment 157.2, Mile Points 42.16 – 42.35	764'	Replace 1,350 feet of pipe at [Redacted], Sunol due to the potential for ground movement. This segment of L131 is located on a steep 26% sloping hillside in the Sunol Valley immediately northeast of the	Potential for Ground Movement	Construction

			Redacted just southeast of Redacted Construction is in progress in 2010.		
14	L131, segment 165, Mile Points 46.96 – 48.23  L131, segment 167.9, Mile Points 48.94 – 49.36  L131, segment 169, Mile Points 49.38 – 50.46	14,687'	Evaluate the potential replacement of 22,363 feet of pipe between the Redacted and Irvington Station due to the potential for ground movement. This section of L131 is located over the steep slopes from the Redacted Redacted and through a 10-15 foot easement through Redacted Construction currently is scheduled for 2012.	Potential for Ground Movement	Engineering
15	L131, segment 115, Mile Points 7.39 – 7.75	2066'	PG&E is conducting an engineering review of 2,066 feet of pipe located in the rural area near Redacted Redacted and the Redacted Redacted Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Ground Movement	Under Review
16	L132, segment 106.7, Mile Points 1.35 – 1.87	2628'	Replace pipe at several locations and install other facilities in order to internally inspect L132 through the urban areas between Milpitas and Crystal Springs reservoir due to the potential for ground movement.	Potential for Ground Movement	Engineering



			Based on this inspection, PG&E will determine whether any repair or replacement action is warranted. Construction currently is scheduled for 2012-13.		
17	L138, segment 116, Mile Points 22.70 – 23.40  L138, segment 130, Mile Points 38.43 – 38.58  L138, segment 130.11, Mile Points 38.59 – 38.59  L138, segment 145, Mile Points 48.29 – 48.64	6061'	PG&E is conducting an engineering review of 6,061 feet of pipe between [Redacted] near Caruthers and Fresno for susceptibility to external corrosion. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Corrosion	Under Review
18	L147, segment 110.6, Mile Points 3.26 – 3.28	105'	PG&E is conducting an engineering review of the design materials of 105 feet of pipe near [Redacted] and [Redacted] in San Carlos. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Physical Design and Characteristics	Under Review

19	L173, segment 102.1, Mile Points 1.01 – 1.11  L173, segment 102.6, Mile Points 1.45 – 1.50	765'	An engineering review of this 765 foot pipe segment near [Redacted] in Roseville has been conducted to assess risk for potential third party damage. One third party dig-in occurred nearby; however, that portion of the pipeline has since been sleeved. Most of the area has been fully developed and with completion of the [Redacted] the risk of third party damage has been reduced and no further action is warranted.	Potential for Third-Party Damage	Under Review
20	L187, segment 160, Mile Points 61.75 – 62.00	1320'	PG&E is conducting an engineering review of 1,320 feet of pipe through the rural area near [Redacted] across from [Redacted] near Salinas for the potential for damage by third parties. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Third-Party Damage	Under Review
21	L215, segment 104, Mile Points 3.00 – 3.43  L215, segment 122.3, Mile Points 19.46 – 19.48  L215, segment 123,	3310'	PG&E is conducting an engineering review of 3,310 feet of pipe between [Redacted] in Patterson and [Redacted] in Turlock based on corrosion monitoring data from segments 122.3 and 123. Three areas around the pipe were dug up to permit physical examinations of the pipe. Engineering will continue to monitor these segments, but no further action is warranted at this time.	Potential for Corrosion	Under Review

	Mile Points 19.56 – 19.74				
22	0401-01, segment 104.8, Mile Points 2.48 – 2.76	1492'	PG&E is conducting an engineering review of 1492 feet of pipe through the suburban area along [Redacted] near San Rafael for several risk factors. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Overall	Under Review
23	0407-01, segment 104.8, Mile Points 1.83 – 1.88	247'	PG&E is conducting an engineering review of the design materials of 247 feet of pipe near [Redacted] and [Redacted] near Napa. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Physical Design and Characteristics	Under Review
24	L114-1, segment 103, Mile Points 7.33 – 7.73  L114-2, segment 101, Mile Points 3.18 – 3.80  SP4Z, segment 112, Mile Points 7.45 –	7345'	Remove 7,500 feet of 3 pipes crossing the San Joaquin River, underwater, near [Redacted] due to the potential for ground movement.	Potential for Ground Movement	Initiated

	7.82				
25	L118A, segment 166.13, Mile Points 30.38 – 30.40  L118A, segment 166.17, Mile Points 30.40 – 31.06	2114'	Evaluate the potential replacement of 8,850 feet of pipe through agricultural areas near [Redacted] near Madera due to the potential for third party damage.	Potential for Third-Party Damage	Initiated
26	L119B, segment 101, Mile Points 0.00 – 0.01	1437'	PG&E is conducting an engineering review of the design materials of 1,437 feet of pipe [Redacted] and [Redacted] in Sacramento. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Physical Design and Characteristics	Under Review
27	1202-16, segment 100, Mile Points 0.00 – 0.08  1202-16, segment 101, Mile Points 0.08 – 0.19  1202-16, segment 101.1,	10,304'	All segments (10,304 feet) of pipe along [Redacted] [Redacted] between [Redacted] and [Redacted] in Clovis have been. Seven excavations were performed to examine the pipe. Engineering will continue to monitor these segments, but no further action is warranted at this time.	Potential for Corrosion	Under Review

Mile Points 0.19 – 0.27				
1202-16, segment 101.2, Mile Points 0.27 – 0.49				
1202-16, segment 102, Mile Points 0.49 – 1.03				
1202-16, segment 103, Mile Points 1.03 – 1.05				
1202-16, segment 103.1, Mile Points 1.05 – 1.11				
1202-16, segment 103.3, Mile Points 1.11 – 1.20				
1202-16, segment 115,				

	Mile Points 1.67 – 2.42				
28	L142S, segment 114, Mile Points 7.30 – 8.70	7425'	PG&E is conducting an engineering review of 7,425 feet of pipe along [Redacted] between [Redacted] and [Redacted] in Bakersfield due to the potential for external corrosion. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Corrosion	Under Review
29	1509-04, segment 106, Mile Points 0.78 – 0.88	531'	PG&E is conducting an engineering review of 531 feet of pipe through the suburban area near [Redacted] [Redacted] and [Redacted] in Yuba City for the potential for damage by third parties. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Third-Party Damage	Under Review
30	1509-05, segment 120.1, Mile Points 6.23 – 6.28  1509-05, segment 120.2, Mile Points 6.28 – 6.29  1509-05, segment 120.3, Mile Points 6.29 –	1371'	PG&E is conducting an engineering review of 1,371 feet of pipe through the suburban area near [Redacted] [Redacted] and [Redacted] in Yuba City for the potential for damage by third parties. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Third-Party Damage	Under Review

	6.33  1509-05, segment 121, Mile Points 6.33 – 6.49				
31	1815-15, segment 130.3, Mile Points 2.04 – 2.13	437'	PG&E is conducting an engineering review of 437 feet of pipe through the suburban area near [Redacted] and [Redacted] near Monterey for several risk factors. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Overall	Under Review
32	L195A3-1, segment 100, Mile Points 0.00 – 0.00  L195A3-1, segment 102, Mile Points 0.00 – 0.04  L195A3-1, segment 102.1, Mile Points 0.04 – 0.17	885'	PG&E has reduced the operating pressure and is continuing to conduct an engineering review on approximately 2,000 feet of pipe located underwater, crossing the Sacramento River at [Redacted] for the potential for damage by third parties. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Third-Party Damage	Under Review
33	L210A, segment	5949'	Install facilities to internally inspect L210A between	Overall	Construction

	117.5, Mile Points 18.73 – 18.86  L210A, segment 118.1, Mile Points 18.97 – 19.47		Creed Station and Cordelia Station due to the combination of several risk factors. Construction was performed in 2010.		
34	L300A, segment 240.3, Mile Points 277.85 – 278.01  L300A, segment 240.61, Mile Points 278.01 – 278.10	1272'	PG&E is conducting an engineering review of 1,272 feet of pipe through the suburban area between [Redacted] and [Redacted] in Bakersfield for the potential for damage by third parties. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Third-Party Damage	Under Review
35	L300B, segment 193, Mile Points 161.02 – 161.07  L300B, segment 194, Mile Points 161.43 – 161.48	843'	PG&E is conducting an engineering review of the design materials of 843 feet of pipe through the rural area. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Physical Design and Characteristics	Under Review
36	L316A, segment	7777'	An engineering review of these five segments (7,777	Potential for	Under Review



	<p>111, Mile Points 0.61 – 0.78</p> <p>L316A, segment 112, Mile Points 0.79 – 1.00</p> <p>L316A, segment 113, Mile Points 1.00 – 1.09</p> <p>L316A, segment 115, Mile Points 1.19 – 1.23</p> <p>L316A, segment 116, Mile Points 1.23 – 2.05</p> <p>L316A, segment 117, Mile Points 2.05 – 2.31</p>		<p>feet) of pipe between [Redacted] on [Redacted] [Redacted] and [Redacted] on [Redacted] has been conducted using a Risk Management Direct Assessment (RMDA) process for most of the segments. No further assessment or work is planned at this time.</p>	Corrosion	
37	DCUST1416,	28'	PG&E is conducting an engineering review of 28 feet	Potential for	Under Review

	segment 100, Mile Points 0.00 – 0.01		of pipe through the rural area near [Redacted] and [Redacted] near Ferndale for several risk factors. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Ground Movement	
38	DFDS3543, segment 100, Mile Points 10.91 – 10.91	3'	PG&E is conducting an engineering review of 3 feet of pipe near [Redacted] and [Redacted] in Novato for several risk factors. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Overall	Under Review
39	DRIP7966, Mile Points 0.00 – 0.00	10'	PG&E is conducting an engineering review of the potential for ground movement along 10 feet of pipe near [Redacted] and [Redacted] in San Jose. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Ground Movement	Under Review
40	DRIP7971, segment 651, Mile Points 0.00 – 0.00	10'	PG&E is conducting an engineering review of the potential for ground movement along 10 feet of pipe near [Redacted] and [Redacted] in San Jose. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Potential for Ground Movement	Under Review
41	SP3, segment 160.3, Mile Points 198.49 – 198.49  SP3, segment 160.36,	294'	Replace approximately 200 feet of pipe at [Redacted] in San Pablo due to the potential for ground movement. Construction currently is scheduled for 2011.	Potential for Ground Movement	Engineering

	<p>Mile Points 198.49 – 198.49</p> <p>SP3, segment 160.4, Mile Points 198.49 – 198.49</p> <p>SP3, segment 160.5, Mile Points 198.49 – 198.52</p> <p>SP3, segment 160.6, Mile Points 198.52 – 198.55</p>				
42	<p>X6337, segment 100, Mile Points 10.84 – 10.84</p> <p>X6337, segment 101, Mile Points 10.84 – 10.84</p>	60'	<p>PG&amp;E is conducting a review of two 30-foot segments of pipe near [Redacted] and [Redacted] [Redacted] in Novato to determine the construction history of these pipeline segments. Based on this review, PG&amp;E will determine whether any repair or replacement action is warranted.</p>	Physical Design and Characteristics	Under Review
43	<p>X6526, segment 505,</p>	9'	<p>PG&amp;E is conducting an engineering review of the design materials of about 9 feet of pipe through the</p>	Physical Design and	Under Review

	Mile Points 0.24 – 0.24		rural area. Based on this review, PG&E will determine whether any repair or replacement action is warranted.	Characteristics	
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