



Agenda Item 8H

**TOWN OF BUCKEYE  
STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**Date:** May 7, 2007  
**Meeting Date:** May 15, 2007  
**Requesting Dept.:** Intergovernmental Affairs  
**Staff Liaison:** Ruth Garcia, Director, Intergovernmental Affairs

LA3-1

**Title:**

Resolution of the Mayor and Council of the Town of Buckeye supporting the east-west alternative alignment for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area and requesting a favorable finding by the Commissioners of the Federal Energy Regulatory Commission (FERC) for the east-west alternative alignment.

**Recommended Action:**

Motion to approve Resolution 30-07 supporting the east-west alternative alignment for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area.

Initials	Responsibility	Date	Initials	Responsibility	Date
_____	Bids/Purchases	_____	_____	Finance/Budget	_____
_____	Grants	_____	_____	Contracts	_____
_____	Legal	_____	_____	IGA / MOU	_____
_____		_____	_____		_____

Town Manager Approval *[Signature]* Date 5-10-07  
 Council Action 5-15-07 *[Signature]* Date \_\_\_\_\_  
*[Signature]*

# Local Agencies

LA3-1

The intention of the Mayor and Council of the Town of Buckeye to support an alternative to the proposed route through the Buckeye area is noted. The Town of Buckeye's specific comments on the draft EIS are addressed in the responses to comments LA2-1 through LA2-282.

II-391

# Local Agencies

## SUMMARY

LA3-1  
(cont'd)

**Background:**

On November 10, 2005 Transwestern Pipeline Company, LLC (Transwestern) filed a request with the Federal Energy Regulatory Commission (FERC) to implement the Commission's Pre-filing process for the Phoenix Expansion Project. This request was granted on November 22, 2005. On September 15, 2006, Transwestern filed an application with FERC seeking a Certificate of Public Convenience and Necessity (CPC&N) to construct, own and operate an expansion of its existing interstate natural gas transmission pipeline system (Docket CP06-459-00).

Transwestern provides natural gas transmission services (open-access transportation services in accordance with Part 284 of FERC's Regulations). Therefore, the natural gas in the pipeline may belong to Transwestern, or it may belong to another company that is using the pipeline system to transport its natural gas. According to Transwestern's Application to FERC, the purpose of the Phoenix Expansion Project is to provide up to 500,000 Dth per day of natural gas transmission service from the San Juan Basin (New Mexico) to markets in the Phoenix area. Binding precedent agreements have been made with five Arizona and Phoenix area shippers for 370,000 Dth per day of the capacity (leaving 130,000 Dth of unused capacity per day).<sup>1</sup> It should be noted that Transwestern also seeks authority to acquire an undivided interest in the East Valley Lateral indirectly from El Paso Natural Gas and to use those facilities to provide service in conjunction with the Phoenix Pipeline Project. The East Valley Lateral impacts Pinal County and in particular, the City of Coolidge.<sup>2</sup>

The stated purpose for the Phoenix Expansion Project is to increase natural gas supplies in Arizona to respond to the increased demand for natural gas across all sectors, including the construction of numerous new-gas-fired electric generation facilities.<sup>3</sup> It should be noted that a significant amount of the additional natural gas will be used as a peaking commodity (Table 1) in the generation of electricity. On average from 2000 to 2005, Arizona exported (out of state) 30 percent of the electricity generated in the state.<sup>4</sup>

The Phoenix Expansion project consists of 259.3 miles of new 42 and 36 inch-diameter pipeline beginning at Transwestern's existing mainline near Ash Fork and traversing southward through Yavapai, Maricopa and Pinal Counties in Arizona. The pipeline would terminate at the beginning of El Paso Natural Gas (EPNG) Company's East Valley Lateral southeast of Phoenix. There is an additional element to the project which would also provide some customer laterals, meter stations and ancillary facilities. The section of the Phoenix Pipeline Project that begins at Ash Fork and ends near the Palo Verde Nuclear Power Plant has been identified as Phase I, with a requested in-service date of May, 2008<sup>5</sup>. Transwestern has proposed that 27.8 miles of the Phoenix Expansion Project pipeline be routed through the Town of Buckeye.

<sup>1</sup> Motion to intervene and protest of Southern California Gas company and San Diego Gas and Electric Company, Docket # CP06-459-000.

<sup>2</sup> Ibid.

<sup>3</sup> Application for a Certificate of Public Convenience and Necessity and to Acquire an Undivided Interest in Natural Gas Pipeline Facilities, Docket # CP06-459-00.

<sup>4</sup> Electric Power Annual 2005 - State Data Tables. Energy Information Administration, Department of Energy.

<sup>5</sup> Application for a Certificate of Public Convenience and Necessity and to Acquire an Undivided Interest in Natural Gas Pipeline Facilities, Docket # CP06-459-00.

II-392

# Local Agencies

LA3-1  
(cont'd)

**Table 1 – Phoenix Expansion Project Precedent Agreements**

Shipper	Quantity Annual Daily Average Dth/d <sup>6</sup>	Related Gas Powered Generating Facility	Contract Term
Arizona Public Service	150,000	Redhawk Sundance	15
Salt River Project Agricultural Improvement & Power District	150,000	Desert Basin Santan	15
Southwest Gas Corporation	32,000		15
Gila River Power, LP	25,000	4	
UniSource Energy, Inc.	13,000	15	
Total	370,000		

**Note:** Both APS & SRP(AIPD) have interests in the Hassayampa and Palo Verde Switchyards

As a part of the FERC and environmental process, Transwestern held public information and scoping (Environmental Impact Statement) meetings regarding the pipeline project. These meetings were held in several communities, however, no meetings were held in Buckeye, Arizona.

The Town of Buckeye and several members of its business community, filed as interveners in the FERC process regarding the application of Transwestern for the Phoenix Expansion Project. The Town, along with several of the developers, requested a meeting with Transwestern and FERC to discuss concerns of the proposed pipeline alignment through the Town of Buckeye. FERC granted a technical meeting in the Town of Buckeye which was held on March 14, 2006.

After hearing testimony from the participants at the technical meeting, FERC agreed to request additional information from Transwestern regarding the proposed route through the Town and an alternative route around Buckeye along the approved APS 550 KV transmission line which runs along the Central Arizona Project (CAP) canal in an east-west direction, and then southward toward the Palo Verde Nuclear Power Plant (Palo Verde-Devers Utility corridor for APS transmission lines).

From comments made at the technical meeting, it appeared that the current development in the area that Transwestern has proposed for the siting of the pipeline, had been understated in the FERC application for CPC&N and that there had not been an evaluation of on-going development, including projects that were planned and or permitted. Staff from Transwestern stated that the company had not considered an alternative route because the proposed alignment followed an established utility corridor and that the suggested alternative route, although in a utility corridor, would add additional miles and therefore increase the project's construction costs.

<sup>6</sup> Dth= 1 dekatherm ≈ 1,000,000 BTU ≈ 970 cu. Ft. natural gas.

<sup>7</sup> In January and March of 2006, Transwestern held open houses in Prescott Valley, Sun City West, Black Canyon City, Maricopa, and Casa Grande, Arizona; and Bloomfield New Mexico. Four scoping meetings were held with meetings occurring in Black Canyon City (2/26/06), Casa Grande (3/1/06), Prescott Valley (3/1/06) and Avondale (3/2/2006).

II-393

## Local Agencies

3

LA3-1  
(cont'd)

### Key Considerations:

1. After the initial review of the pipeline design submitted by Transwestern, there may be several mitigation measures that the Town may wish to pursue to improve safety and quality of life issues, as required by the Code of Federal Regulation (C.F.R.) Title 49, Part 192 (Code) or indicated by industry standard.
2. An element of pipeline design is based upon a "design class identification" system (as prescribed by the Code), which identifies minimum pipeline design standards based on the number of dwelling units that are in the area of a proposed pipeline (number of dwelling units located within a one mile long area bounded at a distance of 660 feet from the center line of the pipe). Class 1 has the lowest design standard, whereas Class 4 has the higher design standard. Transwestern's pipeline design calls for Class 2 design through the Town of Buckeye, with the exception of 4.5 miles, which was designed with Class 3 standards. The alignment sheets identified in the FERC application used to identify the use of Class 2 with only 4.5 miles of Class 3 pipeline design are not commensurate with the proposed and permitted development within the Town of Buckeye. Based on current, permitted and planned development occurring in the vicinity of the pipeline route proposed by Transwestern, the use of a Class 3 design for the entire length of the alignment through Buckeye would be required by Code. After an initial review of the draft EIS, a Class 4 design standard should be considered unless and until Transwestern provides detailed analysis identifying the projected impact zones.
3. Through initial review of the east-west alternate route, it has been found that :
  - a. The alternate route appears to be a viable option from a constructability, operations and maintenance point of view
  - b. The alternate route has no planned high population density developments along it
  - c. The majority of the route has no planned development along it
  - d. Because this route would be identified prior to development, land use restrictions could be implemented to keep development farther away from the pipeline
4. Through initial review of the pipeline design submitted by Transwestern, it has been found that information necessary to provide a complete review has not been made available. The Town, through its Counsel, Gust-Rosenfeld, filed document requests through the Freedom of Information Act (FOIA) on November 27, 2006 and Critical Energy Infrastructure Information (CEII) March 26, 2007. To date, a few route maps and diagrams have been received through the FOIA request, however additional necessary information requested through FOIA has not been received and all CEII information requests have not been received to date.
5. Transwestern has stated that their proposed alignment was based upon location of an existing utility easement and the most direct route in order to minimize construction costs<sup>8</sup>.
6. On April 27, 2007, the Draft Environmental Impact Statement (draft EIS) for the Phoenix Expansion Project, Docket No. CP06-459-000, was released. The environmental staffs of the Federal Energy Regulatory Commission, the U.S. Department of the Interior, Bureau of Land Management, U.S. Department of Agriculture, Department of the Interior,

<sup>8</sup> Stated at the FERC technical meeting held in Buckeye, Arizona.

## Local Agencies

3

LA3-1  
(cont'd)

Bureau of Indian Affairs and the Navajo Nation prepared the draft EIS to address Transwestern Pipeline Company's proposed expansion of its natural gas pipeline system.

7. In the draft EIS, Transwestern's proposed route is shown to cost substantially less than the east-west alternative route (North Buckeye). This calculation appears counter-intuitive when put into context and is not supported by documentation. In its application for the CPC&N, Transwestern states that the 259 mile project will cost \$597,737,942. This averages to approximately \$2.3 million per mile. By applying Transwestern's \$2.3 million per mile average, the 47.2 miles of the east-west alternative would cost approximately \$108.6 million (draft EIS estimated at \$128.9 million). At 27.8 miles, the Transwestern proposed route would cost approximately \$63.9 million (draft EIS estimated at \$52.8 million). The incremental cost of the alternative east-west route would be approximately \$44.7 million, or an increase of approximately 7% of the total cost of the Phoenix Expansion Project. Also documented in the CPC&N, Transwestern has built in to its submitted budget under its pre-approved rate structure a \$43 million contingency. Although there may be several needs for the contingency, certainly a portion of the contingency could be used to lessen the gap of potential additional costs of the east-west alternative.
8. A portion of the incremental capital costs for the east-west alternative route would be recouped through costs passed on to the end user. Based upon utility rate structures, it is unknown at this time what percentage of the incremental capital costs would be allowed to be recouped through higher rates according to the pre-approved rate structure (a portion of the incremental capital costs increase may be borne by Transwestern dependent on the pre-approved rate structure.) Staff is working to determine the incremental cost that could be passed on to the end user through any rate increase.
9. From an initial review of the draft EIS, concern has been expressed regarding insufficient analysis of essential flood control structures that could be compromised by Transwestern's proposed route if there were a pipeline rupture/ignition .
10. The draft EIS proposes trench excavation at a "depth sufficient to provide the minimum cover required by DOT specifications" (p. 2-20). The draft EIS proposes minimum coverage for pipe ranging from 2 feet to 5 feet. Code requires a minimum of one foot spacing between the pipeline and other fixtures. Because of the current and future development, the Town has expressed concern regarding conflicts by the pipeline and the planned roadways, dry utilities, and in particular sewer system. Because the Town uses a gravity fed sewage system, depths of the sewage line can be quite deep. It should be noted that in the Motion of El Paso Natural Gas Company for Leave to Intervene (Docket #CP06-459-000), EPNG expresses concern for "workspace for future, routine maintenance or pipeline replacement activities that may be required on the EPNG or Transwestern pipelines." This concern is based upon Transwestern's request to co-locate pipelines with EPNG in their right of way (southeast of the Buckeye Municipal Planning Area). EPNG states that "In some areas, the space constraints would force construction crews to work directly over active high pressure pipelines (as would be the case in Buckeye). This is generally regarded as a strongly disfavored practice, and natural gas pipelines attempt to minimize any type of construction work that involves working directly over active high-pressure pipelines due to the risk of damaging these pipelines." Obviously, the Town of Buckeye has the same concerns.

## Local Agencies

3

LA3-1  
(cont'd)

### Community Benefits/Considerations:

By expressing support of the east-west alternative route for the proposed Phoenix Expansion Project through the Buckeye Municipal Planning Area boundaries, FERC, as well as other entities, will become aware of the community concerns for the health, safety and welfare of Buckeye residents should the proposed Transwestern route be approved.

### Community Involvement:

1. A public meeting notice was advertised in local newspapers announcing the FERC/Transwestern technical meeting that was held on March 14, 2006 in Buckeye, Arizona.
2. Computer Disks (CDs) of the draft EIS have been placed at the Buckeye Public Library and Buckeye Town Hall for public review. In addition, FERC has sent CDs to persons present at the December 2006 technical meeting who requested to be notified.
3. The Intergovernmental Affairs Department has responded to questions to the Town from the development community regarding the Transwestern Pipeline project.

### Financial Implications:

Approving a resolution of support for the east-west alternative route will not have a financial impact on the Town.

### Attachments / Exhibits:

1. Map – pipeline alignments



Department Director's Signature

II-396

**RESOLUTION 30-07**

**A RESOLUTION OF THE MAYOR AND COUNCIL OF THE TOWN OF BUCKEYE, ARIZONA, SUPPORTING THE EAST-WEST ALTERNATIVE ROUTING FOR THE PROPOSED TRANSWESTERN PIPELINE PHOENIX EXPANSION PROJECT THOROUGH THE BUCKEYE MUNICIPAL PLANNING AREA AND REQUESTING A FAVORABLE FINDING FOR THE EAST-WEST ALTERNATIVE ROUTE BY THE COMMISSIONERS OF THE FEDERAL ENERGY REGULATORY COMMISSION (FERC).**

LA4-1

WHEREAS: on September 15, 2006, Transwestern Pipeline Company, LLC (Transwestern) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) seeking a Certificate of Public Convenience and Necessity (Certificate) to construct, own and operate an expansion of its existing interstate natural gas transmission pipeline system;

WHEREAS: the portion of the project known as the Phoenix Expansion Project consists of 259.3 miles of new 42 and 36 inch-diameter pipeline traversing Yavapai, Maricopa and Pinal counties in Arizona, of which 27.8 miles is proposed to be routed through the Town of Buckeye;

WHEREAS: public information meetings were held by Transwestern in January and March 2006 in Prescott Valley, Sun City West, Black Canyon City, Maricopa and Casa Grande, Arizona, but not in Buckeye, Arizona;

WHEREAS: public scoping meetings were held by Transwestern in February and March 2006 in Black Canyon City, Casa Grande, Prescott Valley and Avondale, Arizona, but not in Buckeye, Arizona;

WHEREAS: a technical review meeting was held by FERC in Buckeye, Arizona on December 14, 2006, only after several interveners had filed on behalf of the communities in Buckeye;

WHEREAS: Transwestern has proposed to construct 259.3 miles of 42 and 36 inch-diameter pipeline to supply natural gas to the Phoenix area with approximately 28 miles of 36 inch-diameter pipe with a maximum operating pressure of 1000 psig passing through the Town of Buckeye;

WHEREAS: a significant amount of the natural gas to be supplied by Transwestern will be a peaking service commodity for use by natural gas generating facilities, with some of the resultant production for use by customers outside of the state;

WHEREAS: On average from 2000 to 2005, Arizona exported (out of state) 30 percent of the electricity generated in the state;

WHEREAS: 49 C.F.R. § 192, Subpart O, identifies the calculation method to define the Potential Impact Radius (PIR) as a result of a pipe failure based on the operating pressure of the line and diameter of pipe, in which the PIR for the proposed line is 790 feet from the centerline of the pipe;

# Local Agencies

LA4-1

The Resolution adopted by the Mayor and Council of the Town of Buckeye to support an alternative to the proposed route through the Buckeye area is noted. The Town of Buckeye's specific comments on the draft EIS are addressed in the responses to comments LA2-1 through LA2-282. See also the response to comment PM3-12.

LA4-1  
(cont'd)

WHEREAS: Transwestern's proposed route will place the pipeline 15 feet from the edge of the APS transmission line right of way that parallels the Sun Valley Parkway, a major transportation backbone and anchor for significant residential and commercial development in the Buckeye area;

WHEREAS: plans submitted by Transwestern to the Town of Buckeye Community Development Department for review of their proposed pipeline alignment through the Town were of such limited information, prohibiting the completion of an adequate review;

WHEREAS: on November 27, 2006 the Town of Buckeye has requested essential information for technical analysis of Transwestern's proposed pipeline through the Freedom of Information Act (FOIA) and on March 26, 2007 Critical Energy Infrastructure Information (CEII) in order to complete the technical analysis of Transwestern's proposed pipeline and its alignment through the Town of Buckeye and has not yet received the requested information;

WHEREAS: significant development has been planned and permitted along the Sun Valley Parkway, including several high density master-planned communities;

WHEREAS: Transwestern's design calls for construction standards based upon 49 C.F.R. § 192, in which design class identification was based on the existing dwelling density in early 2006 within a distance of 660 feet from the center line of the pipe, not the potential impact radius (PIR) of 790 feet;

WHEREAS: the Transwestern draft EIS recognizes that the transportation of natural gas "involves some risk to the public in the event of an accident and subsequent release of gas", yet invokes the existence of regulatory safety standards as the means to "ensure that people and the environment are protected from the risk of pipeline accidents (p. 4-191);"

WHEREAS: Transwestern's design based on existing dwelling density in early 2006 does not account for current and on-going development and additional permitted development within the PIR including an elementary school, a fire station, an APS substation, two water wells, a worship site, numerous parks and open space recreation areas, and a planned Maricopa County Flood Control District flood-retardant structure;

WHEREAS: a viable alternate east-west route alignment that would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established Arizona Public Service utility corridor, and in open unpopulated desert exists;

WHEREAS: the draft EIS was released on April 27, 2007, with the standard 45 day comment period for the public to respond to the findings;

WHEREAS: the Transwestern draft EIS appears to be incomplete in its development of essential information in multiple subject areas and does not disclose many of the project impact details needed to make a fully informed, reasoned decision concerning this project and its route;

WHEREAS: Transwestern's proposed route is based upon their time and cost considerations and not upon the safest feasible route;

WHEREAS: the draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative route;

## Local Agencies

# Local Agencies

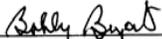
LA4-1  
(cont'd)

WHEREAS: the Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for our current and future residents;

WHEREAS: there is a prudent and reasonable alternative route alignment;

**NOW THEREFORE, BE IT RESOLVED,** for the health, safety and welfare of the community, the Mayor and Council of the Town of Buckeye, Arizona support the east-west alternative routing for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area and request a favorable finding for the east-west alternative route by the Commissioners of the Federal Energy Regulatory Commission (FERC).

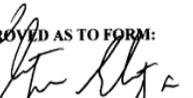
**PASSED AND ADOPTED** by the Mayor and Council of the Town of Buckeye, Arizona, this 15<sup>th</sup> day of May, and 2007.

  
\_\_\_\_\_  
Bobby Bryant, Mayor

ATTEST:

  
\_\_\_\_\_  
Linda Garrison, Town Clerk

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Scott Ruby, Town Attorney

II-399



## *Buckeye news . . .*

**For Immediate Release**

Contact: Bob Bushner  
623-349-6005 (w)  
623-695-3175 (c)

LA5-1 Buckeye Town Council Approves Resolution Supporting Alternative Route for Proposed Natural Gas Pipeline West of the White Tank Mountains; Public Hearing Set June 6

Buckeye, Ariz. (May 18, 2007) – The Town Council unanimously approved a resolution calling for a federal agency to consider an alternate route for a natural gas pipeline rather than the proposed route that would pass through several master-planned communities west of the White Tank Mountains.

The resolution asks members of the Federal Energy Regulatory Commission (FERC) for a “favorable finding” of a rural east-west route for the underground natural gas pipeline “for the health, safety and welfare of the community.”

Transwestern Pipeline Company, L.L.C., filed a pre-filing request with FERC in September 2005 for the Phoenix Expansion Project – more than 259 miles of 42- and 36-inch high-pressure natural gas pipeline through Arizona – almost 28 of those miles in Buckeye’s planning area.

Public information meetings detailing the project were held in early 2006 in six Arizona cities, including Sun City West and Avondale. However, no meetings were held in Buckeye until December of last year, some 15 months after the firm filed its initial request with the FERC.

“That meeting was eventually held after the Town and several business owners intervened in the proceedings,” Buckeye Mayor Bobby Bryant said. “Considering that the pipeline’s proposed route cuts through several master-planned communities, we view the lack of public meetings in Buckeye early on in the process a serious oversight.”

## Local Agencies

5

LA5-1 The press release of the Resolution adopted by the Mayor and Council of the Town of Buckeye to support an alternative to the proposed route through the Buckeye area is noted. The Town of Buckeye’s specific comments on the draft EIS are addressed in the responses to comments LA2-1 through LA2-282. See also the response to comment PM3-12.

LA5-1  
(cont'd)

Transwestern's proposed route will place the pipeline 15 feet from the edge of the APS transmission line right-of-way that parallels the Sun Valley Parkway – a major transportation corridor and eventual anchor for planned residential, retail, commercial and employment development.

According to the Council's resolution, Transwestern's design is based on dwelling density that existed along the route in early 2006 and does not account for on-going development and additional permitted development in the immediate area in the near future – an elementary school, a fire station, an APS substation, two water wells, a worship site, numerous parks and open space recreation areas and a planned Maricopa County Flood Control District flood-retardant structure.

In fact, the pipeline could come within 50 feet of some occupied homes in Tartesso, a master-planned community along Sun Valley Parkway.

"The Transwestern draft environmental impact statement appears to be incomplete in its development of essential information in multiple subject areas and does not disclose many of the project impact details needed to make a fully-informed, reasoned decision concerning this project and its route," the resolution continues.

"Transwestern's proposed route is based upon their time and cost considerations and not upon the safest feasible route."

The alternate route around Buckeye supported by Town officials follows an approved transmission line which runs east-west along the Central Arizona Project canal mostly in an open, unpopulated desert, then south toward the Palo Verde Nuclear Power Plant.

While the additional miles would add about seven percent to the cost of the overall project, an initial review of the alternate route found that

- The route is a viable option from a constructionability, operations and maintenance aspects
- There is no planned high-population density along it
- The majority of the route has no other planned development along it
- And because the route was identified prior to development, land use restrictions could be implemented to keep any proposed development farther away from the pipeline, the resolution states.

## Local Agencies

LA5-1  
(cont'd)

The Federal Energy Regulatory Commission will hold a public hearing on Transwestern's draft Environmental Impact Statement on the company's proposed route through Buckeye at 7 p.m. Wednesday, June 6, in the Buckeye Community Center, 201 Centre Ave.

- 30 -

## Local Agencies

5

# City of Litchfield Park

Office of the Mayor

June 11, 2007

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Docket # CP06-459-000

Dear Chairman Kelliher:

LA6-1 It has come to my attention that Transwestern Pipeline, LLC, has proposed to route 25.7 miles of 36 inch-diameter high pressure natural gas transmission pipeline through the Town of Buckeye as a part of the Phoenix Expansion Pipeline Project, Docket # CP06-459-000. The community of Buckeye has expressed their concern about the alignment of the pipeline through the town and has identified a feasible alternative route for consideration.

The purpose of the Phoenix Expansion Project (project) as stated in the application to Federal Energy Regulatory Commission (FERC) is to increase natural gas supplies based upon across-all sectors demand in Arizona. It has been noted however that a majority of the natural gas from this project will be used for natural gas powered electric generating facilities. Historically (2000-2005), 30% of the electricity generated in Arizona is exported outside the state – primarily to Southern California. It has also been noted that Southern California Edison has filed an application with the Arizona Corporation Commission, Docket No. L-00000A-06-0295-00130 for a 500KV alternating current transmission line and related facilities in Maricopa and La Paz Counties originating at the Harquahala Generating Station Switchyard (serving the Redhawk and Sundance natural gas generating stations near Palo Verde Nuclear Plant) and terminating in Riverside County, CA. Although the Arizona Corporation Commission (ACC) recently voted to deny the application, Southern California Edison has stated that it will either re-apply to the ACC or will file an application with FERC. It is highly likely, that the total export of electricity will increase significantly based upon these two complementary projects. Although Southern California will greatly benefit from this project, the disproportionate impacts of the transmission pipeline will be borne by the residents and community of Buckeye. This brings to the fore the possibility of an Environmental Justice issue (EO 12898 – 1994).

The argument presented by Transwestern for their proposed route through the Town of Buckeye over the east-west alternative route is that of construction cost.

214 West Wiggam Boulevard \* Litchfield Park, Arizona 85340  
Phone (623) 935-5033 \* Fax (623) 935-5427 \* TDD Number 1-800-367-8939  
www.litchfield-park.org

## Local Agencies

LA6-1 The Commission responded separately to this letter on July 12, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459.

II-403

LA6-1  
(cont'd)

The incremental construction cost of the east-west alternative would be approximately \$40 million (based upon an average per mile cost of \$2.3 million using Transwestern's total construction costs). Although Transwestern has expressed a concern of the increase of cost to the individual consumer, Transwestern has built \$43 million in its construction budget for contingency and no calculations on the marginal impact on rates has been provided, particularly in light of the capacity of the pipeline being 500,000 decatherms per day. Also ignored by Transwestern in the cost calculations is that of operations and maintenance (O & M). It is known in the pipeline industry that the cost of O & M is greater for pipelines in urban areas (such as the location of Transwestern's proposed alignment) than in rural unpopulated areas (such as the location of the Town's proposed alternative east-west alignment).

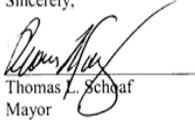
Additional issues of concern regarding Transwestern's proposed pipeline alignment through the Town of Buckeye include:

1. The Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for its current and future residents;
2. The pipeline alignment proposed by Transwestern cuts through the Town without regard to the careful planning by the Town and without regard for the future urban nature of the area or quality of life;
3. The pipeline design by Transwestern is insufficient for the planned and permitted residential and commercial development along the proposed route, causing safety concerns;
4. The potential impact radius (PIR) of the pipeline route proposed by Transwestern covers residential and commercial development, including an elementary school, a fire station, an Arizona Public Service substation, two water wells, a worship site, numerous parks and open space recreations areas, and a planned Maricopa County Flood Control District flood-retardant structure;
5. For the health, safety, and welfare of the community, an alternative pipeline route has been identified (east-west alternative route). The alternative alignment would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established APS utility corridor, and is in open unpopulated desert;
6. Through technical analysis:
  - a. The alternative route has been found to be a viable option from a constructability, operations and maintenance point of view;
    - i. The alternative route has no planned high population density developments along it route
    - ii. The alternative route provides the safest feasible route for the transmission pipeline
7. Transwestern's proposed route is based upon their time and cost consideration and not upon the safest feasible route; and
8. The draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative.

## Local Agencies

LA6-1 (cont'd) Based upon the fore mentioned information, I ask the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

Sincerely,

  
Thomas J. Schraf  
Mayor

S:\DOCS\Civ Council\Intergov\Transwestern Pipeline\tr of support.doc

## Local Agencies



June 18, 2007

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE, Room 1A  
Washington, DC 20426

Re: Docket No. CP06-459-000

Dear Secretary Bose,

Please accept this correspondence as formal comments from the Town of Gilbert regarding the Phoenix Expansion Project (Docket No. CP06-459-000).

LA7-1

The Draft Environmental Impact Statement notes the purpose of this project is to enable Transwestern to serve the increasing demand for energy in the Phoenix Metropolitan area, either directly to homes and businesses or indirectly through local utility companies. The project involves laying over 250 miles of pipeline through northwestern New Mexico and Arizona beginning in fall 2007, with the line becoming operational by fall 2008. In addition, Transwestern "would acquire an undivided interest in the existing 36.7 mile-long, 24 inch-diameter East Valley Lateral, which extends between Pinal and Maricopa Counties, Arizona".

The Town of Gilbert has been monitoring this project because the end of the proposed pipeline connects to the existing East Valley Lateral line, which is located within the municipality's general plan boundaries. While construction for the Phoenix Expansion Project does not warrant permits from Gilbert, we believe we should be notified when the existing line is modified in any way, since the lateral is located within the Town and services members our community.

Several modifications are proposed for the existing East Valley Lateral through the Phoenix Expansion Project. First and foremost, the end of the project line will be linked with 36 inch-diameter piping compared to the present 24 inch-diameter piping. Gilbert has concerns with the stability of inequitable piping (i.e. age and size) over the long-term. Secondly, the existing line will be tapped into at the Southwest Gas New Florence Meter Station and the Southwest Gas Germann Meter Station. While this does not have a direct construction impact on Gilbert soil, it does raise concerns for the safety of the line after it is manufactured. Lastly, it appears as though other utility companies have an interest in purchasing energy from this infrastructure if Transwestern secures an undivided interest in the lateral. The Town of Gilbert is not certain what this means for the future of the pipeline and/or service to its constituents.

Thank you for the opportunity voice the Town of Gilbert's concerns on record; the community will continue to track this project accordingly. Gilbert also stands ready to discuss these issues further with Transwestern and initiate a working relationship that sustains this process. My contact information should you require additional information from me is 480-503-6765 or tamir@ci.gilbert.az.us.

Sincerely,

Tami Ryall  
Assistant Town Manager

Town of Gilbert | A Community of Excellence  
50 E Civic Center Drive, Gilbert, AZ 85296 Phone 480-503-6000 Fax: 480 497-4943 www.ci.gilbert.az.us

## Local Agencies

LA7-1

The Town of Gilbert is included on the mailing list for the Phoenix Expansion Project and, thus, will receive a copy of the final EIS for the project. The town can also stay informed about the project through the use of the eLibrary function available on the FERC Internet website ([www.ferc.gov](http://www.ferc.gov)) under Docket Number CP06-459.

Regarding the Town's safety concerns, Transwestern would be required to continue to operate the East Valley Lateral in compliance with all applicable safety protocols. The SWG Germann and New Florence Meter Stations would be designed, constructed, and operated in accordance with applicable standards and protocols. The DOT would be primarily responsible for monitoring Transwestern's operation, including safety-related protocols, after construction. The proposed meter stations would provide SWG's customers access to new and competitive sources of natural gas other than currently available only from EPNG.



I, the undersigned, Linda M. Farris, being the duly appointed and qualified City Clerk of the City of Avondale, certify the attached is a true and correct copy of Resolution 2656-607, adopted by the Mayor and Council on June 11, 2007.

  
Linda M. Farris, CMC  
City Clerk

---

**City Clerks Office**  
11465 W. Civic Center Drive • Avondale, Arizona, 85323  
Phone: (633) 333-1200 • Fax: (623) 333-0120 • TDD: (623) 333-0100  
[www.avondale.org](http://www.avondale.org)

## Local Agencies

# Local Agencies

### RESOLUTION NO. 2656-607

A RESOLUTION OF THE COUNCIL OF THE CITY OF AVONDALE, ARIZONA, SUPPORTING THE EAST-WEST ALTERNATIVE ROUTING FOR THE PROPOSED TRANSWESTERN PIPELINE PHOENIX EXPANSION PROJECT THROUGH THE BUCKEYE MUNICIPAL PLANNING AREA AND REQUESTING A FAVORABLE FINDING FOR THE EAST-WEST ALTERNATIVE ROUTE BY THE COMMISSIONERS OF THE FEDERAL ENERGY REGULATORY COMMISSION.

LA8-1

**WHEREAS**, on September 15, 2006, Transwestern Pipeline Company, LLC ("Transwestern") filed an application with the Federal Energy Regulatory Commission (the "Commission" or the "FERC") seeking a Certificate of Public Convenience and Necessity (the "Certificate") to construct, own and operate an expansion of its existing interstate natural gas transmission pipeline system; and

**WHEREAS**, the portion of the pipeline expansion project known as the Phoenix Expansion Project consists of 259.3 miles of new 42" and 36" diameter pipeline traversing Yavapai, Maricopa and Pinal counties in Arizona, of which 27.8 miles is proposed to be routed through the Town of Buckeye; and

**WHEREAS**, Transwestern has proposed to construct 259.3 miles of 42" and 36" diameter pipeline to supply natural gas to the Phoenix area with approximately 28 miles of 36" diameter pipe with a maximum operating pressure of 1,000 psig passing through the Town of Buckeye; and

**WHEREAS**, 49 C.F.R. § 192, Subpart O, identifies the calculation method to define the Potential Impact Radius ("PIR") as a result of a pipe failure based on the operating pressure of the line and diameter of pipe, in which the PIR for the proposed line is 790 feet from the centerline of the pipe; and

**WHEREAS**, Transwestern's proposed route will place the pipeline 15 feet from the edge of the Arizona Public Service transmission line right-of-way that parallels the Sun Valley Parkway, a major transportation backbone and anchor for significant residential and commercial development in the Town of Buckeye; and

**WHEREAS**, significant development has been planned and permitted along the Sun Valley Parkway, including several high density, master-planned communities; and

LA8-1

The Commission responded separately to this letter on July 12, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459. The Resolution adopted by the Council of the City of Avondale to support an alternative to the proposed route through the Buckeye area is noted. See also the response to comment PM3-12.

# Local Agencies

LA8-1  
(cont'd)

**WHEREAS**, Transwestern's design calls for construction of the pipeline within a distance of 660 feet from the center line of the pipe, not the PIR of 790 feet; and

**WHEREAS**, Transwestern's design based on existing dwelling density in early 2006 does not account for current and on-going development and additional permitted development within the PIR including an elementary school, a fire station, an APS substation, two water wells, a worship site, numerous parks and open space recreation areas, and a planned Maricopa County Flood Control District structure; and

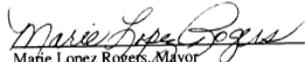
**WHEREAS**, a viable alternate east-west route alignment that would avoid the Town of Buckeye exists along the Palo Verde-Devers Utility Corridor, an established Arizona Public Service utility corridor, and in open unpopulated desert (the "East-West Alternative").

**NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF AVONDALE** as follows:

**SECTION 1.** That, for the health, safety and welfare of the West Valley community, the Council of the City of Avondale supports the East-West Alternative routing for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area and requests a favorable finding for the East-West Alternative route by the Commissioners of the Federal Energy Regulatory Commission.

**SECTION 2.** That the Mayor, the City Manager, the City Clerk and the City Attorney are hereby authorized and directed to take all steps necessary to carry out the purpose and intent of this Resolution.

**PASSED AND ADOPTED** by the Council of the City of Avondale, June 11, 2007.

  
Marie Lopez Rogers, Mayor

ATTEST:

  
Linda M. Farris, City Clerk

APPROVED AS TO FORM:

  
Andrew J. McGuire, City Attorney

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

Transwestern Pipeline Company ) Docket No. CP06-459-000

COMMENTS BY THE CITY OF CASA GRANDE, ARIZONA ON  
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Pursuant to the April 27, 2007 Notice in this docket, the City of Casa Grande submits its written comments on the draft Environmental Impact Statement ("EIS").

I. Background Information

LA9-1 The City of Casa Grande, Arizona is a municipality located near the intersections of Interstates 8 and 10 in central Arizona. With a population of just 25,224 during the 2000 census, but estimated at near 40,000 today, the City has seen a growth boom over the past several years, and the City has been working diligently to both react to this explosive growth, and plan for the future development of the City to ensure that traditional municipal services are available to its citizens. Transwestern's proposed routing through the City, however, has the potential to impede the growth the City is currently experiencing, as well as preclude the City's ability to provide services to new development that is already planned and approved, and others that have approached the City about annexation and future development.

The City has been actively involved in this process and has expressed its concerns through a number of meetings with Transwestern and stakeholders, and through the proceedings in this Docket. Accordingly, pursuant to the City's prior comments and filings and supported by the comments contained herein, the City asks that the Commission consider and approve the CGEPNG alternative as the alignment that best

# Local Agencies

LA9-1 The City of Casa Grande's comments expressing its concerns regarding the proposed alignment of the Phoenix Lateral along the North Santa Cruz Wash (The Wash) are noted.

As detailed in section 3.4.2.6, the FERC staff considered the City's preferred alignment for the Phoenix Lateral in the route referred to as the CGEPNG Alternative. Section 3.4.2.6 has been revised to include additional information regarding the City's plans for sanitary sewer infrastructure in The Wash as well as additional information filed by Transwestern indicating that the Phoenix Lateral and the City's future sanitary sewer project can be collocated in The Wash alignment. Section 3.4.2.6 includes the recommendation that Transwestern work closely with the City and provide the FERC with engineering drawings to support collocation of the Phoenix Lateral and the future sanitary sewer project in The Wash (see also mitigation measure number 10 in section 5.3).

While the CGEPNG Alternative offers some advantages over the corresponding segment of the proposed route, the FERC staff reaffirms its conclusion that the CGEPNG Alternative is not preferable to the proposed alignment in The Wash.

LA9-1  
(cont'd)

serves the citizens of Casa Grande and preserves the City's ability to meaningfully plan for future growth.

**II. Transwestern's Proposed Alignment Interferes with the City's Plans and Ability to Provide Municipal Services**

LA9-2

The siting of the Transwestern pipeline, though providing no actual service to the City of Casa Grande, is of paramount importance to the City's continued, planned, growth. Transwestern's preferred location of this pipeline, as proposed in the draft EIS, could serve to undermine planned development of the City, interfere with the City's planned trail system, and prove potentially fatal to the City's primary and preferred option of providing sewer service to a substantial portion of the City as it exists today, and as it is planned and likely will exist in the future. As such, utilization of the CGEPNG alternative is critical to the City's ability to provide meaningful and necessary services to its citizens and those who do and will call it home.

Location of the Transwestern pipeline through the proposed Santa Cruz Wash within the City of Casa Grande poses several unique and unfortunate consequences to the City. As proposed, the pipeline would cross the City's municipal golf course, would traverse six miles of property planned for use as a regional trail system, would conflict with several proposed communities within the City, and potentially interfere with the installation of one or more interceptor lines contemplated in the City's proposed Wastewater Master Plan. While each of these elements reduces the quality of life for the majority of Casa Grande residents, the interference or potential interference with the City's proposed sewer interceptor lines poses the greatest hurdles and risk to continued regional wastewater planning and growth in the area.

# Local Agencies

LA9-2

Section 3.4.2.6 has been revised to include additional information regarding the City's plans to construct sanitary sewer infrastructure in The Wash.

LA9-2  
(cont'd)

Currently, the City of Casa Grande has one wastewater treatment plant, located roughly at the northwest corner of Thornton and Kortsen Roads. This plant was strategically located in this area as it is in a location near the Santa Cruz wash, which is among the lowest points of elevation in the City. Location at a low point of elevation is important in the provision of wastewater services, as it allows the lines that enter the plant to use gravity flow to reach the facility, decreasing the costs of providing that service (by reducing the need for lift stations or force mains), as well as the reliability thereof through utilization of gravity, rather than forced, flow. This plant is currently being configured to serve up to 6 MGD (million gallons/day) of flow, but has the capability as configured to serve up to 12 MGD on site.

Over the past few years, the City has analyzed a number of options to providing sewer service to its current boundaries, as well as looking to the future to secure options of providing service to the numerous areas that will require sewer in the future. Early planning of sewer options is essential as the use of gravity flow options are limited, and failure to acquire or preserve meaningful routes to reach a treatment facility can greatly increase the costs of these projects – sometimes fatally so. Although the City has looked at a number of service options over the years, and continues to do so today, it has become apparent that expansion of the current facility on, or near, the site is preferable to other options available to the City. Use of one facility at a natural low point near the west end of town is both economical and wise way to provide sewer service to the City proper and its high growth areas. As a result, the City has been evaluating and participating in discussions with landowner representatives in the area to acquire additional property and

## Local Agencies

LA9-2  
(cont'd)

expand the capacity of the facility to at least 62 MGD. This expansion is necessary to serve just a portion of the anticipated growth within the City in its planning horizon.

One of the primary inflows to the expanded treatment facility will come from a proposed sewer interceptor or interceptors from the east side of the City. Although ultimate design of these lines is not complete, the City has been working on a contract with a company to design and site the lines. The initial analysis of the project proposes that it is possible that these interceptors could be as large as fifty-four inches, or that multiple lines of slightly reduced size will be required. But to maintain adequate gravity flow for lines of this size, the Santa Cruz Wash is by far the most preferred, and currently the only, adequate option.

The use of the sewer line in the wash has been contemplated for a number of years, and a number of developers and property owners have annexed into the City with the anticipation that the development of this line will help solve their sewer needs. The City has spent hundreds of thousands of dollars to develop these plans, spent countless hours of staff time to work on the planning aspects related to its development, and has a number of its current property owners counting on its installation to provide sewer to their property. The City has agreements being contemplated with developers that are all contingent upon the development of the wash interceptor line. These developments will bring additional residents to the community, but also serve meaningful roles in bringing regional commercial centers, office parks, and industrial development to the City; all of which are important to the City's ability to sustain itself and the growth in the area.

The City of Casa Grande has grave concerns over the compatibility of Transwestern's proposed facility being located within the same area that the City has

# Local Agencies

LA9-2  
(cont'd)

targeted and acquired property in order to provide regional park amenities and sewer collection facilities of substantial size. If the addition of the Transwestern facility precludes the City's construction of its lines (lines that will require heavy equipment to install and will be buried within the wash in near proximity or on top of Transwestern's lines), or substantially interferes with the same, the City will be unable to provide reasonable sewer solutions to its residents and property owners. Having spent many years planning for these facilities, and substantial efforts to acquire the right-of-way necessary to support the uses, the City's efforts should not simply be converted for the benefit of Transwestern. While the City facilities may not exist today, planning for their construction is long underway, and the need for them is already here.

There has been substantial comment and considerable energy spent during this process on the potential effect that the siting of Transwestern's facilities would have on developers of property in and around the City of Casa Grande. These concerns cannot be minimized, as meaningful planned development is essential to building a strong, lasting community, and the myriad efforts that have gone into that process in the City, Pinal County, and its surrounding communities should not go for naught. Similarly, the planning and construction of large sewer infrastructure needs is essential to facilitate this development and meet the needs of the existing citizens of the City. The CGEPNG alternative would best serve the needs of the City of Casa Grande by preserving its primary and preferred option to provide wastewater services within the City, while allowing Transwestern to install its own infrastructure in an identified utility corridor.

Accordingly, the City requests that the Commission consider the CGEPNG alternative within the City of Casa Grande or compel Transwestern to undergo

## Local Agencies

LA9-2  
(cont'd)

mitigation that would ensure that the City of Casa Grande will have the continuing ability to utilize the wash corridor for the installation of its sewer improvements and that can minimize the impact on development within the corridor.

RESPECTFULLY SUBMITTED this 18<sup>th</sup> day of June, 2007,

City of Casa Grande, Arizona

          /s/ Electronically Filed            
Brett D. Wallace  
Casa Grande City Attorney  
510 E. Florence Boulevard  
Casa Grande, Arizona 85222  
(520) 421-8600

## Local Agencies



ELAINE M. SCRUGGS  
Mayor

June 15, 2007

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re. Docket #CP06-459-000

Dear Chairman Kelliher:

LA10-1

The 36 inch-diameter high pressure natural gas transmission pipeline which Transwestern Pipeline, LLC is proposing to route through the Town of Buckeye is of great concern. Based on my personal study of information available, I am writing to support the Town of Buckeye's reasonable request that the east-west alternative route be selected instead of the proposed route. The reasons for my support of the alternative route are as follows.

- The alternative alignment would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established APS utility corridor, and is in open unpopulated desert.
- The alternative route provides the safest feasible route for the transmission pipeline.
- There is no requirement for an EIS along the alternative route.

The route proposed by Transwestern Pipeline presents serious public safety risks and concerns, not only for the Town of Buckeye but for neighboring communities in the west valley. The alternative route, on the other hand, protects the community at large.

5850 W. Glendale Ave. • Glendale, AZ 85301 • Phone (623) 930-2260 • Fax (623) 937-2764

## Local Agencies

10

LA10-1

The Commission responded separately to this letter on July 16, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459. See also the response to comment PM3-12.

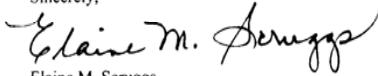
II-416

Joseph T. Kelliher, Chairman  
June 15, 2007  
Page 2

LA10-1  
(cont'd)

For the health, safety and welfare of the community, I respectfully request the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

Sincerely,



Elaine M. Scruggs  
Mayor

Cc: The Honorable Bobby Bryant  
Mayor, Town of Buckeye

II-417

Local Agencies

10



**Maricopa County**  
Board of Supervisors

June 18, 2007

Mary Rose Garrido Wilcox  
District Five  
321 W. Jefferson, 10<sup>th</sup> Floor  
Phoenix, Arizona 85013-2148  
Phone: 602.596.7992  
Fax: 602.596.4558  
TDD: 602.596.2000  
mroseco@maricopa.gov

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Docket # CP06-459-000

Dear Chairman Kelliher:

LA11-1 It has come to my attention that Transwestern Pipeline, LLC, has proposed to route 25.7 miles of 36 inch-diameter high pressure natural gas transmission pipeline through the Town of Buckeye as a part of the Phoenix Expansion Pipeline Project, Docket # CP06-459-000. The community of Buckeye has expressed their concern about the alignment of the pipeline through the town and has identified a feasible alternative route for consideration.

LA11-2 The purpose of the Phoenix Expansion Project (project) as stated in the application to Federal Energy Regulatory Commission (FERC) is to increase natural gas supplies based upon across-all sectors demand in Arizona. It has been noted however that a majority of the natural gas from this project will be used for natural gas powered electric generating facilities. Historically (2000-2005), 30% of the electricity generated in Arizona is exported outside the state - primarily to Southern California. It has also been noted that Southern California Edison has filed an application with the Arizona Corporation Commission, Docket No. L-00000A-06-0295-00130 for a 500KV alternating current transmission line and related facilities in Maricopa and La Paz Counties originating at the Harquahala Generating Station Switchyard (serving the Redhawk and Sundance natural gas generating stations near Palo Verde Nuclear Plant) and terminating in Riverside County, CA. Although the Arizona Corporation Commission (ACC) recently voted to deny the application, Southern California Edison has stated that it will either re-apply to the ACC or will file an application with FERC. It is highly likely, that the total export of electricity will increase significantly based upon these two complementary projects. Although Southern California will greatly benefit from this project, the disproportionate impacts of the transmission pipeline will be borne by the residents and community of Buckeye. This brings to the fore the possibility of an Environmental Justice issue (EO 12898 - 1994).

LA11-3 The argument presented by Transwestern for their proposed route through the Town of Buckeye over the east-west alternative route is that of construction cost. The incremental construction cost of the east-west alternative would be approximately \$40 million (based upon an average per mile cost of \$2.3 million using Transwestern's total construction cost). Although Transwestern has expressed a concern of the increase of cost to the individual consumer, Transwestern has built \$43 million in its construction budget for contingency and no calculations on the marginal impact on rates has been provided, particularly in light of the capacity of the pipeline being 500,000 decerms per day. Also ignored by Transwestern in the cost calculations is that of operations and maintenance (O & M). It is known in the pipeline industry that the cost of O & M is greater for pipelines in urban areas (such as the location of

II-418

## Local Agencies

LA11-1 The Town of Buckeye and other Buckeye area stakeholders made their concerns known through participation in the NEPA process, which included a technical conference held in Buckeye on December 14, 2006. In response to these concerns, the Agency Staffs examined two route alternatives that would potentially reduce impacts on the Buckeye planning area. As discussed in detail in section 3.4.2.5, the Agency Staffs concluded that neither alternative represented an environmentally preferable or economically viable alternative to the proposed route through the Buckeye area. The Agency Staffs also responded to all comments on the draft EIS filed by the Buckeye area stakeholders (see most notably the response to comment letter LA2).

LA11-2 Refer to section 1.1 of the EIS that discusses the project purpose and need, and section 4.8.7 that discusses environmental justice.

LA11-3 The evaluation of the Buckeye Alternatives was not based solely on costs, although for an alternative to be adopted as the preferred alternative, it must be economically viable. Transwestern estimates that construction of the Buckeye Alternatives would cost approximately \$74 million more than the proposed project and has stated that the additional costs would render the project uneconomic. The majority of the cost increase would be due to the 19 additional miles of pipeline and additional compression that would be associated with the Buckeye Alternatives. Suggestions that the \$43 million contingency Transwestern has built into its project costs could partially offset the additional cost of the Buckeye Alternatives would leave no contingency for the remaining 260 miles of pipeline proposed to be constructed outside of the Buckeye area.

Regarding operation and maintenance costs, the Buckeye area is expected to develop over the next several decades. Therefore, any additional operation and maintenance costs that Transwestern may incur due to increased development along the proposed alignment would be incurred over time and would be at least partially offset by the additional operation and maintenance costs associated with maintaining 19 more miles of pipeline associated with the Buckeye Alternatives. Therefore, the difference in operation and maintenance costs over time would not be significant in comparison with the construction cost difference of \$74 million between the proposed and alternative routes. Section 3.4.2.5 has been revised to include additional discussion regarding future development along the proposed route and the Buckeye Alternatives.

LA11-3  
(cont'd)

Transwestern's proposed alignment) than in rural unpopulated areas (such as the location of the Town's proposed alternative east-west alignment).

Additional issues of concern regarding Transwestern's proposed pipeline alignment through the Town of Buckeye include:

LA11-4

LA11-5

LA11-6

1. The Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for its current and future residents;
2. The pipeline alignment proposed by Transwestern cuts through the Town without regard to the careful planning by the Town and without regard for the future urban nature of the area or quality of life;
3. The pipeline design by Transwestern is insufficient for the planned and permitted residential and commercial development along the proposed route, causing safety concerns;
4. The potential impact radius (PIR) of the pipeline route proposed by Transwestern covers residential and commercial development, including an elementary school, a fire station, an Arizona Public Service substation, two water wells, a worship site, numerous parks and open space recreations areas, and a planned Maricopa County Flood Control District flood-retardant structure;
5. For the health, safety and welfare of the community, an alternative pipeline route has been identified (east-west alternative route). The alternative alignment would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established APS utility corridor, and is in open unpopulated desert;
6. Through technical analysis:
  - a. The alternative route has been found to be a viable option from a constructability, operations and maintenance point of view;
    - i. The alternative route has no planned high population density developments along its route
    - ii. The alternative route provides the safest feasible route for the transmission pipeline
7. Transwestern's proposed route is based upon their time and cost consideration and not upon the safest feasible route; and
8. The draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative.

Based upon the fore mentioned information, I ask the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

Sincerely,



Mary Rose Wilcox  
Supervisor, District 5

## Local Agencies

11

LA11-4

Development plans for the Buckeye area have not been overlooked and are addressed in sections 3.4.2.5 and 4.7.3.2.

LA11-5

Section 4.11.1 describes how pipeline class designations and HCAs are determined and identifies the class designations and HCAs along the proposed pipeline route. See also the responses to comments PM3-8 and PM3-56 regarding pipeline class designations in the Buckeye area.

LA11-6

Serious consideration was given to the Buckeye Alternatives as discussed in section 3.4.2.5. The analysis in the EIS contains sufficient information to allow the Agency Staffs to conclude that neither the North nor South Buckeye Alternative represents an environmentally preferable or economically viable alternative to the proposed route through the Buckeye area. The EPA agreed with this conclusion in its comments on the draft EIS (see comment letter FA-4).

The analysis of the Buckeye Alternatives was not based solely on costs and time. See the response to comment LA11-3.

As discussed in section 1.1 and supported by policy statements of the ACC, there is a strong need for competitive natural gas transportation infrastructure in central and southern Arizona. While some commentors have suggested that the natural gas transported by the proposed project would benefit other markets outside of Arizona, all of Transwestern's shippers have stated that the proposed project would benefit their Arizona customers directly by meeting the growing demand for natural gas in Arizona, by providing pipeline-on-pipeline competition to areas historically served by only one provider (EPNG), and by increasing natural gas supply reliability.

The purpose of an alternatives analysis is not to demonstrate the infeasibility of an alternative under consideration, but to determine whether the alternative is preferable to the proposed project. Alternatives can be feasible and yet not preferred.

# Local Agencies

**RESOLUTION NO. 07-1156**

**A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, SUPPORTING THE TOWN OF BUCKEYE'S EAST-WEST ALTERNATIVE ROUTING FOR THE PROPOSED TRANSWESTERN PIPELINE PHOENIX EXPANSION PROJECT THOROUGH THE BUCKEYE MUNICIPAL PLANNING AREA; REQUESTING A FAVORABLE FINDING FOR THE EAST-WEST ALTERNATIVE ROUTE BY THE COMMISSIONERS OF THE FEDERAL ENERGY REGULATORY COMMISSION (FERC); AND SUPPORTING BUCKEYE IN ITS EFFORTS TO CONTACT LOCAL UTILITY COMPANIES AND ASK FOR THEIR SUPPORT OF THE EAST-WEST ALTERNATIVE.**

LA12-1

WHEREAS: on September 15, 2006, Transwestern Pipeline Company, LLC (Transwestern) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) seeking a Certificate of Public Convenience and Necessity (Certificate) to construct, own and operate an expansion of its existing interstate natural gas transmission pipeline system;

WHEREAS: the portion of the project known as the Phoenix Expansion Project consists of 259.3 miles of new 42 and 36 inch-diameter pipeline traversing Yavapai, Maricopa and Pinal counties in Arizona, of which 27.8 miles is proposed to be routed through the Town of Buckeye;

WHEREAS: Transwestern's proposed route will place the pipeline 15 feet from the edge of the APS transmission line right of way that parallels the Sun Valley Parkway, a major transportation backbone and anchor for significant residential and commercial development in the Buckeye area;

WHEREAS: a viable alternate east-west route alignment that would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established Arizona Public Service utility corridor, and in open unpopulated desert exists;

WHEREAS: the draft EIS was released on April 27, 2007, with the standard 45 day comment period for the public to respond to the findings;

WHEREAS: the Transwestern draft EIS appears to be incomplete in its development of essential information in multiple subject areas and does not disclose many of the project impact details needed to make a fully informed, reasoned decision concerning this project and its route;

WHEREAS: Transwestern's proposed route is based upon their time and cost considerations and not upon the safest feasible route;

WHEREAS: the draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative route;

WHEREAS: the Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-

LA12-1

The Resolution adopted by the Council of the City of Goodyear to support an alternative to the proposed route through the Buckeye area and support Buckeye in its efforts to contact local utility comments and ask for their support is noted. See also the response to comment PM3-12.

LA12-1  
(cont'd)

planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for our current and future residents;

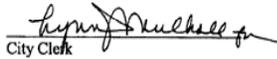
WHEREAS: there is a prudent and reasonable alternative route alignment;

NOW, THEREFORE BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF GOODYEAR, ARIZONA support the Town of Buckeye's east-west alternative routing for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area; requests a favorable finding for the east-west alternative route by the Commissioners of the Federal Energy Regulatory Commission (FERC); and supports the Town of Buckeye's efforts in contacting local utility companies and asking for their support of the alternative alignment.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Arizona this 18 day of June 2007.

  
Mayor

ATTEST:

  
City Clerk

APPROVED AS TO FORM:

  
City Attorney

II-421

# Local Agencies



**Honorable Bob Barrett**  
Mayor

June 11, 2007

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Docket # CP06-459-000

Dear Chairman Kelliher:

LA13-1

It has come to my attention that Transwestern Pipeline, LLC, has proposed to route 25.7 miles of 36 inch-diameter high pressure natural gas transmission pipeline through the Town of Buckeye as a part of the Phoenix Expansion Pipeline Project, Docket # CP06-459-000. The community of Buckeye has expressed their concern about the alignment of the pipeline through the town and has identified a feasible alternative route for consideration.

The purpose of the Phoenix Expansion Project (project) as stated in the application to Federal Energy Regulatory Commission (FERC) is to increase natural gas supplies based upon across-all sectors demand in Arizona. It has been noted however that a majority of the natural gas from this project will be used for natural gas powered electric generating facilities. Historically (2000-2005), 30% of the electricity generated in Arizona is exported outside the state – primarily to Southern California. It has also been noted that Southern California Edison has filed an application with the Arizona Corporation Commission, Docket No. L-00000A-06-0295-00130 for a 500KV alternating current transmission line and related facilities in Maricopa and La Paz Counties originating at the Harquahala Generating Station Switchyard (serving the Redhawk and Sundance natural gas generating stations near Palo Verde Nuclear Plant) and terminating in Riverside County, CA. Although the Arizona Corporation Commission (ACC) recently voted to deny the application, Southern California Edison has stated that it will either re-apply to the ACC or will file an application with FERC. It is highly likely, that the total export of electricity will increase significantly based upon these two complementary projects. Although Southern California will greatly benefit from this project, the disproportionate impacts of the transmission pipeline will be borne by the residents and community of Buckeye. This brings to the fore the possibility of an Environmental Justice issue (EO 12898 – 1994).

The argument presented by Transwestern for their proposed route through the Town of Buckeye over the east-west alternative route is that of construction cost. The incremental construction cost of the east-west alternative would be approximately \$40 million (based upon an average per mile cost of \$2.3 million using Transwestern's total construction costs). Although Transwestern has expressed a concern of the increase of cost to the individual consumer, Transwestern has built \$43 million in its construction budget for contingency and no calculations on the marginal impact on rates has been provided, particularly in light of the capacity of the pipeline being 500,000 decerns per day. Also ignored by Transwestern in the cost calculations is that of operations and maintenance (O & M). It is known in the pipeline industry that the cost of O & M is greater for

8401 W. Monroe Street • Peoria, Arizona 85345 • 623-773-7306 • Fax 623-773-7301

## Local Agencies

LA13-1

The Commission responded separately to this letter on July 26, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459.

## Local Agencies

13

LA13-1  
(cont'd)

pipelines in urban areas (such as the location of Transwestern's proposed alignment) than in rural unpopulated areas (such as the location of the Town's proposed alternative east-west alignment).

Additional issues of concern regarding Transwestern's proposed pipeline alignment through the Town of Buckeye include:

1. The Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for its current and future residents;
2. The pipeline alignment proposed by Transwestern cuts through the Town without regard to the careful planning by the Town and without regard for the future urban nature of the area or quality of life;
3. The pipeline design by Transwestern is insufficient for the planned and permitted residential and commercial development along the proposed route, causing safety concerns;
4. The potential impact radius (PIR) of the pipeline route proposed by Transwestern covers residential and commercial development, including an elementary school, a fire station, an Arizona Public Service substation, two water wells, a worship site, numerous parks and open space recreations areas, and a planned Maricopa County Flood Control District flood-retardant structure;
5. For the health, safety and welfare of the community, an alternative pipeline route has been identified (east-west alternative route). The alternative alignment would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established APS utility corridor, and is in open unpopulated desert;
6. Through technical analysis:
  - a. The alternative route has been found to be a viable option from a constructability, operations and maintenance point of view;
    - i. The alternative route has no planned high population density developments along it route
    - ii. The alternative route provides the safest feasible route for the transmission pipeline
7. Transwestern's proposed route is based upon their time and cost consideration and not upon the safest feasible route; and
8. The draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative.

Based upon the fore mentioned information, I ask the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

Sincerely,



Bob Barrett  
Mayor



*City of El Mirage*  
*Mayor's Office*

June 22, 2007

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Docket # CP06-459-000

Dear Chairman Kelliher:

LA14-1 It has come to my attention that Transwestern Pipeline, LLC, has proposed to route 25.7 miles of 36 inch-diameter high pressure natural gas transmission pipeline through the Town of Buckeye as a part of the Phoenix Expansion Pipeline Project, Docket # CP06-459-000. The community of Buckeye has expressed their concern about the alignment of the pipeline through the town and has identified a feasible alternative route for consideration.

The purpose of the Phoenix Expansion Project (project) as stated in the application to Federal Energy Regulatory Commission (FERC) is to increase natural gas supplies based upon across-all sectors demand in Arizona. It has been noted however that a majority of the natural gas from this project will be used for natural gas powered electric generating facilities. Historically (2000-2005), 30% of the electricity generated in Arizona is exported outside the state – primarily to Southern California.

Although Southern California will greatly benefit from this project, the disproportionate impacts of the transmission pipeline will be borne by the residents and community of Buckeye. The Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for its current and future residents. The pipeline alignment proposed by Transwestern cuts through the Town without regard to the careful planning by the Town and without regard for the future urban nature of the area or quality of life.

I ask the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

Sincerely,

Mayor Fred Waterman

City of El Mirage, P.O. Box 26, El Mirage, Arizona 85335  
(623) 980-9901, TDD (623) 933-3258  
[www.cityofelmirage.org](http://www.cityofelmirage.org)

## Local Agencies

LA14-1 The Commission responded separately to this letter on July 26, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459.

II-424



**Town of Youngtown**  
12030 Clubhouse Square  
Youngtown, Arizona 85363

CP06-459-000

OFFICE OF  
EXTENSION

2007 JUL 19 A 8:23

ORIGINAL

June 26, 2007

Joseph T. Kelliher, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Docket # CP06-459-000

Dear Chairman Kelliher:

LA15-1 It has come to my attention that Transwestern Pipeline, LLC, has proposed to route 25.7 miles of 36 inch-diameter high pressure natural gas transmission pipeline through the Town of Buckeye as a part of the Phoenix Expansion Pipeline Project, Docket # CP06-459-000. The community of Buckeye has expressed their concern about the alignment of the pipeline through the town and has identified a feasible alternative route for consideration.

The purpose of the Phoenix Expansion Project (project) as stated in the application to Federal Energy Regulatory Commission (FERC) is to increase natural gas supplies based upon across-all sectors demand in Arizona. It has been noted however that a majority of the natural gas from this project will be used for natural gas powered electric generating facilities. Historically (2000-2005), 30% of the electricity generated in Arizona is exported outside the state - primarily to Southern California. It has also been noted that Southern California Edison has filed an application with the Arizona Corporation Commission, Docket No. L-00000A-06-0295-00130 for a 500KV alternating current transmission line and related facilities in Maricopa and La Paz Counties originating at the Harquahala Generating Station Switchyard (serving the Redhawk and Sundance natural gas generating stations near Palo Verde Nuclear Plant) and terminating in Riverside County, CA. It is highly likely, that the total export of electricity will increase significantly based upon these two complementary projects. Although Southern California will greatly benefit from this project, the disproportionate impacts of the transmission pipeline will be borne by the residents and community of Buckeye. This brings to the fore the possibility of an Environmental Justice issue (EO 12898 - 1994).

The argument presented by Transwestern for their proposed route through the Town of Buckeye over the east-west alternative route is that of construction cost. The incremental construction cost of the east-west alternative would be approximately \$40 million (based upon an average per mile cost of \$2.3 million using Transwestern's total construction costs). Although Transwestern has expressed a concern of the increase of cost to the individual consumer, Transwestern has built \$43 million in its construction budget for contingency and no calculations on the marginal impact on rates has been provided, particularly in light of the capacity of the pipeline being 500,000 decatherms per day. Also ignored by Transwestern in the cost calculations is that of operations and maintenance (O & M). It is known in the pipeline industry that the cost of O & M is greater for pipelines in urban areas (such as the location of Transwestern's proposed alignment) than in rural unpopulated areas (such as the location of the Town's proposed alternative east-west alignment).

OFFICE OF THE MAYOR AND COUNCIL

2007-00170

Town Hall: 623/933-6286 Police: 623/974-3665 Court: 623/972-6226 Fax: 623/933-6861 TDD: 623/974-3665

# Local Agencies

LA15-1 The Commission responded separately to this letter on July 26, 2007. The Commission's response is part of the public record for the Phoenix Expansion Project and is available for viewing on the FERC Internet website (<http://www.ferc.gov>) under Docket Number CP06-459.

II-425

Mr. Keither  
July 11, 2007  
Page Two

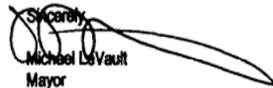
## Local Agencies

15

LA15-1  
(cont'd) Additional issues of concern regarding Transwestern's proposed pipeline alignment through the Town of Buckeye include:

1. The Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for its current and future residents;
2. The pipeline alignment proposed by Transwestern cuts through the Town without regard to the careful planning by the Town and without regard for the future urban nature of the area or quality of life;
3. The pipeline design by Transwestern is insufficient for the planned and permitted residential and commercial development along the proposed route, causing safety concerns;
4. The potential impact radius (PIR) of the pipeline route proposed by Transwestern covers residential and commercial development, including an elementary school, a fire station, an Arizona Public Service substation, two water wells, a worship site, numerous parks and open space recreations areas, and a planned Maricopa County Flood Control District flood-retardant structure;
5. For the health, safety and welfare of the community, an alternative pipeline route has been identified (east-west alternative route). The alternative alignment would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established APS utility corridor, and is in open unpopulated desert;
6. Through technical analysis:
  - a. The alternative route has been found to be a viable option from a constructability, operations and maintenance point of view;
    - i. The alternative route has no planned high population density developments along its route
    - ii. The alternative route provides the safest feasible route for the transmission pipeline
7. Transwestern's proposed route is based upon their time and cost consideration and not upon the safest feasible route; and
8. The draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative.

Based upon the fore mentioned information, I ask the FERC Commissioners to carefully consider the east-west alternative route as the preferred route for the Phoenix Expansion Pipeline Project Buckeye alignment.

  
Michael LeVault  
Mayor

Cc: Bobby Bryant, Mayor of Buckeye

II-426

#25



CITY OF SURPRISE  
Main Agenda

June 28, 2007 @ 6:00:00 PM

[+ Back](#) [Print](#)

Council Meeting Date: June 28, 2007	Contact Person: Michelle Lehman, Intergovernmental Relations
Submitting Department:	District: Citywide
Staff Recommendations: Approve	

LA16-1

Consent	Regular	x	Public Hearing	Report/Discussion
---------	---------	---	----------------	-------------------

**Agenda Wording:**

Consideration and action on Resolution #07-83 supporting the east-west alternative alignment for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning area.

**Motion:**

I move to approve Resolution #07-83 in support of the east-west alternative route for the proposed Transwestern Pipeline Phoenix Expansion Project.

**Background:**

Transwestern Pipeline Co. wants to build a major natural-gas pipeline (\$711 million project) through the town of Buckeye's planned development of the Sun Valley Parkway. Buckeye officials are in opposition of Transwestern's proposed alignment due to planned development along Sun Valley Parkway and public safety issues.

The town of Buckeye respectfully requests the City of Surprise's support by way of a resolution in support of an alternative east-west pipeline route.

**Financial Impact Statement:**

None

**ATTACHMENTS:**

[Click to download](#)

Resolution

# Local Agencies

LA16-1

The Resolution adopted by the Mayor and Council of the City of Surprise, Arizona to support an alternative to the proposed route through the Buckeye area is noted. See also the response to comment PM3-12.

LA16-1  
(cont'd)

- Memo
- Comparative Pipeline Routes
- Follow Up Memo Re: Questions From 06/14/07 Council meeting

**Meeting Requirements:**

Powerpoint x Video White Board Other x

**Presentation Speaker Names (spelling and titles for TV captions):**

**Michelle R. Lehman**

**If necessary:**

**Ruth Garcia, Buckeye Intergovernmental Relations Director**

**City Clerk's Office Only:**

**Council Action:  
Motion/Second**

Shafer	_____
Elkins	_____
Bails	<u>S</u>
Sullivan	<u>M</u>
Arismendez	_____
Johnson	_____
Foro	_____

**Results:**

For	<u>5</u>
Against	<u>0</u>
Passed	_____
Failed	_____
Continue	_____
Tabled	_____
Absent	<u>1</u> (Arismendez)
Vacancy	<u>1</u> (District 1)

II-428

# Local Agencies

LA16-1  
(cont'd)

**RESOLUTION 07-83**

**A RESOLUTION OF THE MAYOR AND COUNCIL OF  
THE CITY OF SURPRISE, ARIZONA, SUPPORTING  
THE TOWN OF BUCKEYE AND THEIR EFFORTS TO  
ESTABLISH AN ALTERNATIVE EAST-WEST  
ROUTING FOR THE PROPOSED TRANSWESTERN  
PIPELINE PHOENIX EXPANSION PROJECT  
THROUGH THE BUCKEYE MUNICIPAL PLANNING  
AREA.**

WHEREAS: on September 15, 2006, Transwestern Pipeline Company, LLC (Transwestern) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) seeking a Certificate of Public Convenience and Necessity (Certificate) to construct, own and operate an expansion of its existing interstate natural gas transmission pipeline system;

WHEREAS: the portion of the project known as the Phoenix Expansion Project consists of 259.3 miles of new 42 and 36 inch-diameter pipeline traversing Yavapai, Maricopa and Pinal counties in Arizona, of which 27.8 miles is proposed to be routed through the Town of Buckeye;

WHEREAS: Transwestern has proposed to construct 259.3 miles of 42 and 36 inch-diameter pipeline to supply natural gas to the Phoenix area with approximately 28 miles of 36 inch-diameter pipe with a maximum operating pressure of 1000 psig passing through the Town of Buckeye;

WHEREAS: a significant amount of the natural gas to be supplied by Transwestern will be a peaking service commodity for use by natural gas generating facilities, with some of the resultant production for use by customers outside of the state;

WHEREAS: On average from 2000 to 2005, Arizona exported (out of state) 30 percent of the electricity generated in the state;

WHEREAS: 49 C.F.R. § 192, Subpart O, identifies the calculation method to define the Potential Impact Radius (PIR) as a result of a pipe failure based on the operating pressure of the line and diameter of pipe, in which the PIR for the proposed line is 790 feet from the centerline of the pipe;

WHEREAS: Transwestern's proposed route will place the pipeline 15 feet from the edge of the APS transmission line right of way that parallels the Sun Valley Parkway, a major transportation backbone and anchor for significant residential and commercial development in the Buckeye area;

WHEREAS: plans submitted by Transwestern to the Town of Buckeye Community Development Department for review of their proposed pipeline alignment through the

II-429

## Local Agencies

LA16-1  
(cont'd)

Town were of such limited information, prohibiting the completion of an adequate review;

WHEREAS: on November 27, 2006 the Town of Buckeye has requested essential information for technical analysis of Transwestern's proposed pipeline through the Freedom of Information Act (FOIA) and on March 26, 2007 Critical Energy Infrastructure Information (CEII) in order to complete the technical analysis of Transwestern's proposed pipeline and its alignment through the Town of Buckeye and has not yet received the requested information;

WHEREAS: Transwestern's design calls for construction standards based upon 49 C.F.R. § 192, in which design class identification was based on the existing dwelling density in early 2006 within a distance of 660 feet from the center line of the pipe, not the potential impact radius (PIR) of 790 feet;

WHEREAS: the Transwestern draft EIS recognizes that the transportation of natural gas "involves some risk to the public in the event of an accident and subsequent release of gas", yet invokes the existence of regulatory safety standards as the means to "ensure that people and the environment are protected from the risk of pipeline accidents (p. 4-191);"

WHEREAS: Transwestern's design based on existing dwelling density in early 2006 does not account for current and on-going development and additional permitted development within the PIR including an elementary school, a fire station, an APS substation, two water wells, a worship site, numerous parks and open space recreation areas, and a planned Maricopa County Flood Control District flood-retardant structure;

WHEREAS: a viable alternate east-west route alignment that would avoid the Town of Buckeye, would lie along the Palo Verde-Devers Utility Corridor, an established Arizona Public Service utility corridor, and in open unpopulated desert exists;

WHEREAS: the Transwestern draft EIS appears to be incomplete in its development of essential information in multiple subject areas and does not disclose many of the project impact details needed to make a fully informed, reasoned decision concerning this project and its route;

WHEREAS: Transwestern's proposed route is based upon their time and cost considerations and not upon the safest feasible route;

WHEREAS: the draft EIS has not demonstrated sufficient purpose of and need for action and has not demonstrated an infeasibility of the east-west alternative route;

WHEREAS: the Town of Buckeye has engaged in urban planning to manage growth, including working closely with the development community through the process of master-planned communities, conserved its environmental and cultural resources and has provided a high quality-of-life community for our current and future residents;

LA16-1  
(cont'd)

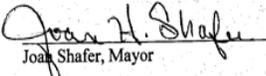
WHEREAS: there is a prudent and reasonable alternative route alignment;

WHEREAS, the City understands that the Town of Buckeye is diligently working on the Project; and,

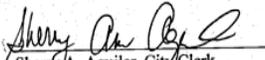
WHEREAS, the City acknowledges that the Town of Buckeye needs the City's support;

**NOW, THEREFORE, BE IT RESOLVED** by the Mayor and Council of the City of Surprise, Arizona, that the City of Surprise supports the Town of Buckeye in their efforts to establish an alternative east-west routing for the proposed Transwestern Pipeline Phoenix Expansion Project through the Buckeye Municipal Planning Area.

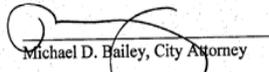
APPROVED AND ADOPTED this 28 day of June, 2007.

  
Joan Shafer, Mayor

ATTEST:

  
Sherry A. Aguilar, City Clerk

APPROVED AS TO FORM:

  
Michael D. Bailey, City Attorney

Yeas: Mayor Shafer, Vice-Mayor Sullivan, Council Members: Bails, Foro and Johnson. Absent: Afismendez (1 vacancy - District 1)

Nays: \_\_\_\_\_

II-431

# Local Agencies

*Privileged and Confidential  
Attorney Work Product*

RISK-INFORMED ASSESSMENT  
OF THE PROPOSED PHOENIX EXPANSION  
NATURAL GAS PIPELINE TRANSMISSION  
PIPELINE PROJECT

PRELIMINARY DRAFT  
July 26, 2007

Prepared by:

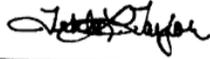


07/26/07

Robert Esenwein, CEP  
Brown and Caldwell

Date

Senior QA Reviewer:



07/26/07

Tekla L. Taylor, R.G.  
Vice President  
Brown and Caldwell

Date

II-432

Local Agencies

17

*Privileged and Confidential  
Attorney Work Product*

LA17-1

**RISK INFORMED ASSESSMENT OF THE  
PROPOSED PHOENIX EXPANSION  
NATURAL GAS TRANSMISSION  
PIPELINE PROJECT**

Prepared for  
Confidential Client  
July 2007

**BROWN AND CALDWELL**

1415 Louisiana, Ste 2500  
Houston, Texas 77002

II-433

## Local Agencies

17

LA17-1 A partial draft copy of this report was filed by the Town of Buckeye with its comments on the draft EIS (see comment letter LA2). One of the stated purposes of the report is to assess the likelihood of a catastrophic pipeline accident occurring in the Buckeye area. The report states that "It is crucial to understand that natural gas transmission pipeline facilities are safe modes of transporting essential energy to our nation's cities and communities" and that the potential for rupture of the proposed Phoenix Expansion Project is "very low." These assessments are consistent with the pipeline safety data presented in section 4.11 of the EIS, which document that serious pipeline accidents are rare and that natural gas transmission pipelines do not represent a significant risk to public safety, especially in comparison with other human activities and natural disasters.

Despite this assessment of low risk, the report concludes that "Without a complete prohibition on construction within, near, or under the easement, it is unreasonable to expect that some impact to the pipeline will not occur [in the Buckeye area], whether intentionally or accidentally, through direct or indirect human activity" and recommends that no habitable structures be planned within 1,100 to 1,200 feet of the proposed project. We disagree with these conclusions. See the responses to comments PM3-7 and CO3-5 that discuss future utility crossings of the proposed pipeline and comment PM3-45 that addresses a 2004 TRB report and the concept of setbacks from natural gas transmission pipelines. The TRB report does not recommend setbacks from pipelines and recognizes that there are many practical and cost implications of introducing significant setbacks from existing or proposed pipelines.

Local communities such as the Town of Buckeye are not expected to possess the expertise necessary to evaluate the proposed Phoenix Expansion Project. Rather, that responsibility resides with the FERC and other federal cooperating agencies including the BLM, FS, BIA, Navajo Nation, and DOT. These agencies possess the expertise and experience to evaluate all aspects of proposed pipeline projects including safety and reliability. The DOT is specifically charged with developing pipeline design, construction, maintenance, and operational specifications and procedures that are protective of public safety. Numerous state and local governments, organizations, and individuals contributed to the assessment of the proposed project through the public participation process described in section 1.3.

The potential for a terrorist attack is addressed in section 4.11.4. See also the response to comment PM3-19.

**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY** ..... 1

**1. PURPOSE AND OBJECTIVES** ..... 1-1

**2. SCOPE AND APPLICABILITY** ..... 2-1

**3. ASSESSMENT OF THE RELIABILITY AND SAFETY ANALYSIS OF THE PHOENIX EXPANSION PROJECT**  
**DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)** ..... 3-1

3.1 Assessing the Likelihood of a Pipeline Accident..... 3-1

3.2 Consequences of a Natural Gas Pipeline Rupture: Specific Instances ..... 3-1

3.3 Chronology of the El Paso Natural Gas (EPNG) Carlsbad Pipeline Rupture ..... 3-2

3.4 Federal Investigation of the EPNG Carlsbad Rupture ..... 3-3

3.5 NTSB Findings from the EPNG Carlsbad Incident ..... 3-5

3.6 Transwestern's Phoenix Expansion Project Proposed Safety Program with Assessment of Pipeline Rupture  
Impact on the EIS ..... 3-5

3.7 Natural Gas Transmission Pipeline Rupture..... 3-6

3.8 Heat Flux Phases of Pipeline Rupture..... 3-7

3.9 The Consequences of Pipeline Rupture and Pipeline Routing Decisions ..... 3-8

**4. THE MULTIPLE VARIABLES INVOLVED IN NATURAL GAS PIPELINE INCIDENTS** ..... 4-1

4.1 Edison New Jersey Incident ..... 4-1

4.2 Post-NTSB Appeal by Texas Eastern Corp. .... 4-1

4.3 An Historical Natural Gas Transmission Pipeline Incident: Houston, Texas, 1969..... 4-2

4.4 Other Incidents and Annual Incident Totals..... 4-2

**5. NATURAL GAS TRANSMISSION PIPELINE VULNERABILITIES TO RISK**..... 5-1

5.1 The Pipeline Industry ..... 5-1

5.2 Pipeline Security Risks ..... 5-1

5.3 Pipeline Integrity Risks ..... 5-2

**6. THE PROBLEM OF LOCATING A NATURAL GAS TRANSMISSION PIPELINE IN A DEVELOPING AREA** ..... 1

**ATTACHMENT A** ..... A

Pipeline Engineering Lecture Slides, University of Newcastle upon Tyne ..... A

**ATTACHMENT B** ..... B

National Transportation Safety Board, Pipeline Accident Brief, DCA-97-EP-005, Transmission Pipeline Rupture  
and Fire, Indianapolis, Indiana ..... B

**ATTACHMENT C** ..... C

Pipeline Failure Causes, www.corrosion-doctors.org ..... C

**ATTACHMENT D** ..... D

National Transportation Safety Board, Relating to the Edison New Jersey Natural Gas Transmission Rupture and  
Fire ..... D

II-434

# Local Agencies

Table of Contents	Risk Informed Assessment Proposal Phoenix Expansion Natural Gas Transmission Pipeline Project
ATTACHMENT E .....	E
Government Accountability Office, Natural Gas Pipeline Safety, September 2006 .....	E
ATTACHMENT F .....	F
U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit Reauthorization of the Pipeline Safety Program, Statement by Mark R. Dayton, Deputy Assistant Inspector General U.S. Department of Transportation .....	F
ATTACHMENT G .....	G
A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines, Mark Stephens, C-FER Technologies, October 2000 .....	G
ATTACHMENT H .....	H
Federal Register: August 6, 2002, Volume 67, Number 151, Pipeline Safety: High Consequence Areas for Transmission Pipelines .....	H
ATTACHMENT I .....	I
Estimating the Influence of Natural Hazards on Pipeline Risk and System Reliability Proceedings of the 2004 International Pipeline Conference, Calgary, Alberta, Canada .....	I
ATTACHMENT J .....	J
Remotely Controlled Valves on Interstate Natural Gas Pipelines September 1999, U.S. Department of Transportation Research and Special Programs Administration .....	J
ATTACHMENT K .....	K
Comments of the New York State Reliability Council on (the) Proposed Millennium Pipeline Project Impact on (the) Millwood-Sprain Brook Right of Way, Comments to Federal Energy Regulatory Commission, Prepared by the New York State Reliability Council .....	K

II-435

## Local Agencies

## RISK INFORMED ASSESSMENT PROPOSED EXPANSION NATURAL GAS TRANSMISSION PIPELINE PROJECT

### EXECUTIVE SUMMARY

Brown and Caldwell conducted a Risk Informed Assessment of the Phoenix Expansion Natural Gas Transmission Pipeline Project proposed by Transwestern Pipeline Company (Transwestern). This assessment was limited to the proposed routing within the Town of Buckeye limits and was prepared to assist the Town in understanding and communicating to their citizens, the risks posed to residential land uses by the installation, operation and maintenance of a natural gas pipeline.

In evaluating the safety risks associated with a pipeline project, there are typically a minimum of twenty-two key pipeline integrity risks of concern that require detailed assessment by the pipeline risk managers (operators) and the stakeholders. This type of assessment was not included in the Draft Environmental Impact Statement (EIS) provided by Transwestern and was therefore not available to the public to review and provide comment. The findings and opinions summarized below and discussed in more detail in subsequent sections of this report highlight some of the concerns with the limited methodology used to evaluate risk in the Draft EIS and provide insight on the potential risks associated with routing a pipeline within close proximity to residential developments.

Findings and opinions from the Risk Informed Assessment performed for the Proposed Phoenix Expansion Project in the Town of Buckeye, Arizona includes the following:

1. Between 1986-2004, an annual average of 60 accidents occurred on natural gas transmission pipelines. These accidents are associated with a higher number of fatalities than other types of pipeline accidents.
2. Between 1999-2001 an annual average of 73 natural gas pipelines accidents occurred causing 6 fatalities, 10 injuries, and over \$20 million in property damage with the risk of injury and damage increasing with pipeline proximity to human activity.
3. Standard probabilistic measures of (safety) risk which multiply probabilities and consequences are not adequate in assessing the safety risk of natural gas transmission pipelines especially when routed adjacent to inhabited structures. Risk numbers alone do not distinguish between high consequence, low probability events and low consequence, high probability events.
4. Pipeline safety is not a function of adherence to minimum federal safety standards regulating the pipeline industry. Safety is a complex idea and involves not only adherence to regulatory standards, but also involves operating company safety leadership, effective implementation of operation and maintenance programs, local community stakeholder communication, and prudent pipeline routing decisions based upon risk informed assessment.
5. Current U.S. regulation of natural gas transmission pipelines focuses primarily on ensuring the safety of the physical facilities themselves, and do not focus upon or require setbacks for pipeline easements by local communities.

**PRIVILEGED AND CONFIDENTIAL**

ES-1

Use of contents on this sheet is subject to the limitations specified at the end of this document.  
P:\Buckeye, Town of (AZ)\132940 - Town of Buckeye\Deliverables\Reports\001R Risk Inf. Assess. 07.26.07.doc

Privileged and Confidential  
Attorney Work Product

II-436

6. Local communities do not have the expertise or resources to properly evaluate risks associated with pipeline routing and therefore are disadvantaged by proposals which discount the safety risks imposed by such routing decisions.
7. Emergency Response planning proposed by pipeline operators as safety mitigation is not useful as a credit against the risks associated with pipeline rupture events. No matter how effective such planning may be, response to such emergencies cannot be fast enough to save those most at risk in the extreme heat flux zones associated with the most likely early ignition gas release scenarios.
8. The hazard radius associated with a 36 inch natural gas transmission pipeline operating at 1100 psig is between 1100 feet and 1200 feet. No habitable structures should be planned within the hazard areas.
9. Natural gas transmission pipelines may potentially cause unacceptable consequences so that even if the probability of rupture is very low, prudent routing decisions will locate these at a distance from populated areas similar to standards in other countries.

**CONFIDENTIAL**

**ES-2**

Use of contents on this sheet is subject to the limitations specified at the end of this document.  
P:\Buckeye, Town of (AZ)\32940 - Town of Buckeye\Deliverables\Reports\001R Risk Inf. Assess. 07.26.07.doc

**Privileged and Confidential  
Attorney Work Product**

# Local Agencies

## RISK INFORMED ASSESSMENT PROPOSED EXPANSION NATURAL GAS TRANSMISSION PIPELINE PROJECT

### 1. PURPOSE AND OBJECTIVES

The purpose of this risk-informed assessment is to provide The Town of Buckeye, Arizona with pertinent information necessary to inform their citizens regarding the risks posed to a variety of land uses by the installation, operation, and maintenance of a proposed natural gas transmission pipeline (NGTP). The need for this assessment arises from two issues. First, the routing of NGTP near urban and residential land uses is relatively new. Few local governments across the country are prepared technically to evaluate the risk such facilities pose to public safety and welfare and as a result, zoning and set-back provisions in local ordinances are relatively limited.

The second need for the assessment arises from The Town of Buckeye's recognition that adequate land use guidance and risk assessment has not been provided by the project applicant (Transwestern Pipeline Company) nor by the federal commission (Federal Energy Regulatory Commission, FERC) through the Draft Environmental Impact Statement (EIS) prepared to meet National Environmental Policy Act requirements. At the time of preparation of this risk-informed assessment, public hearings on the Draft EIS had been held, and some citizens of The Town of Buckeye that attended at least one hearing were "surprised" to learn that NGTP facilities actually do impose public safety and reliability risks. This response from members of the public underscores the need to provide meaningful information concerning what can go wrong with such facilities; what the consequences can be if a pipeline incident was to occur, and how likely it is that such an incident can occur given current technology and regulation. Such information, grounded in science and within the rule of reason is essential for public stakeholders as pipeline routing decisions are made.

Research demonstrates that the concept of "risk" can be assessed from a variety of perspectives: probability (of occurrence), and deterministic approaches to risk assessment are among the most well known. Both of these approaches attempt to deal with the range of uncertainties that affect any judgment concerning whether specific decisions or actions should or would be required. While more on the topic of "risk" will be discussed later in this assessment, it is crucial to understand that NGTP facilities are safe modes of transporting essential energy to our nation's cities and communities. However, the mere assertion that NGTPs are safe or even statistical evaluation of the safe record of gas transport is only one part of multiple considerations concerning risk. Those who assume risk or who have unknown risks imposed upon them want a more complete understanding of the factors that affect the overall risk of a technology whether it be well known technologies such as automobile operations or lesser known technologies such as nuclear power. Part of the purpose of this risk-informed assessment is to identify what can happen to NGTP facilities, to evaluate the likelihood of these occurrences, to identify risk mitigation options, and to recommend mitigation options that minimize risk commensurate with practicability and economics.

DRIVEN BY COURTESY

1-1

Use of contents on this sheet is subject to the limitations specified at the end of this document.  
P:\Buckeye, Town of (AZ)\132940 - Town of Buckeye\Deliverables\Reports\001R Risk Inf. Assess. 07.26.07.doc

Privileged and Confidential  
Attorney Work Product

II-438

## RISK INFORMED ASSESSMENT PROPOSED EXPANSION NATURAL GAS TRANSMISSION PIPELINE PROJECT

### 2. SCOPE AND APPLICABILITY

The Town of Buckeye, Arizona has engaged Brown and Caldwell to prepare a risk assessment of a proposed NGTP to be routed through the Town. Multiple master-planned communities also have been proposed adjacent to the proposed NGTP route with several residential subdivisions already in the process of completing housing development. Homes, schools, and other sensitive land users may be located from within fifty to five hundred feet from the centerline of the proposed NGTP facility.

EN Engineering was earlier contracted by the Town of Buckeye to provide technical assistance in understanding the design, construction, and operation of NGTP. The EN Engineering report (Evaluation of the Constructability, Safety Measures, and Potential Conflicts of the Transwestern Pipeline Phoenix Expansion Project within the Town of Buckeye, Arizona, May 11, 2007) indicates the following selected conclusions as findings concerning the Transwestern proposed NGTP through the Town of Buckeye, Arizona.

1. "The class locations (those areas along an NGTP where the potential consequences of a gas pipeline incident may be significant) indicated on the "Issued for FERC application" alignment sheets are not commensurate with proposed and permitted development within the Town of Buckeye. It is recommended that the entire length of pipeline within the Town of Buckeye (some 24 miles) be designated as a class 3 location."
2. "The proposed main line value spacing does not appear to comply with the requirements of the code. Designation of the entire length as class 3 location will require two additional main line value settings."
3. "The pipeline alignment places it on the far outside edge of the power line corridor which will be only 15 feet from many development property lines along its route. Even (if constructed) at the center of the power line corridor, the pipeline would still be subjected to roadway and utility crossings which are the higher risk activities."
4. "The numerous planned and permitted developments within the Town of Buckeye anticipate several new road and utility crossings of the pipeline right-of-way." "It is recommended that Transwestern install the pipeline initially at a depth that will place it at least 2 feet below the planned depth of the deepest facility at each of the known crossing locations. By doing so, future excavation damage will be less likely" (EN Engineering, Executive Summary).

Based upon the findings in the EN Engineering report, it is clear that their analysis and conclusions are directly applicable to stakeholder considerations of the potential risk NGTP pose to sensitive land uses. Furthermore, it is evident that the risks have not been adequately addressed within the Draft EIS and communicated to the public. Therefore, it is appropriate and necessary to assess the potential likelihood for and consequences of a NGTP pipeline incident along the route planned within the Town of Buckeye.

BROWN AND CALDWELL

II-439

RISK INFORMED ASSESSMENT  
PROPOSED EXPANSION NATURAL GAS TRANSMISSION  
PIPELINE PROJECT

3. ASSESSMENT OF THE RELIABILITY AND SAFETY ANALYSIS  
OF THE PHOENIX EXPANSION PROJECT DRAFT  
ENVIRONMENTAL IMPACT STATEMENT (EIS)

**3.1 Assessing the Likelihood of a Pipeline Accident**

According to the Transwestern Draft EIS; "Based upon approximately 301,000 miles in Service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1000 miles of pipeline. Using this rate, the pipeline facilities associated with the Phoenix Expansion Project might result in one public fatality about every 311 years. This would represent a slight increase in risk to the nearby public and would not result in a substantial potential for incidents that would cause serious injury or death to members of the public." (P. 4-202).

The controlling pipeline safety case or paradigm is a pipeline rupture. Even though the potential for a rupture on the type of pipeline proposed is very low given the design and regulatory requirements imposed for design, operation and maintenance, the consequences of such a high pressure facility rupturing near populated areas are extremely high. The small utility easement proposed for the high pressure pipeline is not sufficient to protect nearby population and property. The Transportation Research Board has determined that "In addressing likelihood, a fundamental issue is the metric to be used. For example, the probability of failure per unit length of pipeline or volume transported is very low, and safety measured this way exceeds, by far, that of all other modes. However, for the pipeline system as a whole, there are about 300 accidents per year, (including liquid pipelines) which is not negligible, especially from the point of view of those who are adversely affected." (Risk Informed Guidance in Land Use Planning, Special Report 281, TRB/NAS p. 59)<sup>1</sup>

"... The common practice of obtaining a measure of risk by multiplying probabilities and consequences is, in general, not adequate. A risk number alone does not distinguish a high consequence, low probability event from a low consequence, high-probability event." (TRB, 281, P. 59)

**3.2 Consequences of a Natural Gas Pipeline Rupture:  
Specific Instances**

"On August 19, 2000, five year old Kirsten Sumler was enjoying the great American outdoors with her mother, Amanda Smith. They were camping and fishing on the banks of the Pecos River with ten other members of their extended family. Six hundred and seventy-five feet away, an El Paso pipeline (EPNG) ruptured (30" EPNG operating at less than 675 psig). In an instant, six family members were burned alive.

<sup>1</sup> Also, using sheer volume as a metric would suggest that at 1.47 deaths/100 million miles traveled (VMT) that the nation's roadways were relatively safe if it were not for the fact we travel almost 1.7 billion miles annually with over 46,000 fatalities in average. This perspective on the concept of "relatively safe" suggest investments made in vehicle, passenger, and facility safety are reasonable despite the extremely low number of deaths versus VMT.

PROPOSED PROJECT

II-440

The six survivors sought shelter in the river, as the 500-foot tall flame roared over their heads for almost an hour. When rescuers arrive, one badly burned victim begged to be shot. As the rescuers tried to evacuate Kirsten, she cried, not wanting to leave her mother. Amanda told her to go. She promised that the fireman would take good care of her. Unfortunately, Kirsten was burned well beyond the point where good care would help; she died later in the burn unit. Her mother, Amanda, and the four remaining family members also died from their injuries." (Carol Parker, Natural Resources Journal)

### 3.3 Chronology of the El Paso Natural Gas (EPNG) Carlsbad Pipeline Rupture

"At approximately 5:26 a.m., the control room operator (controller) monitoring the pipeline via SCADA at the gas control center located in El Paso, Texas, received a rate of change alarm for one of the three gas turbine compressors at the unattended Pecos River Compressor Station. Less than one minute later, a second compressor shut down and the station went into automatic emergency shut down, isolating the compressor station from the gas transmission pipelines (such a design feature usually includes automatic closure of valves isolating the station from the pipeline(s), opening the blowdown valves to an atmospheric vent to depressurize gas lines, and other features designed to protect critical equipment).

Additional alarms were received at the control center including a rate-of-change alarm for falling inlet pressure at the Pecos River Compressor Station. The controller at this station would not necessarily have known which pipeline was causing the falling inlet pressure alarm. In response to the alarms, the controller requested accelerated updated information from SCADA on the compressor station instead of the usual automatic scan data that occurred automatically at 4-minute intervals.

At approximately 5:30 a.m. the controller telephoned the Pecos River district station lead operations specialist at his home and asked him to send people to the Pecos River Compressor Station. The specialist then called out two personnel to report to the Pecos River Station. At about this time a local EPNG employee (pipeline operations specialist) located at his home south of Carlsbad noticed a glow in the southern sky and suspected an EPNG pipeline might be involved. He called the gas control center and asked if any pressure change had been noticed and passed along his observations. He then called his operating supervisor (pipeline lead operations specialist) and proceeded to report to the Pecos River Compressor Station.

At 5:31 a.m. the gas control center again experience an interruption of data to the SCADA system from the Pecos River Compressor Station that prevented the controller from receiving any additional information from this station. While the station was equipped with an uninterruptible power supply to maintain backup power to critical equipment, the local computer and modem link to SCADA were not connected to this backup power supply. SCADA communication with the Pecos River Compressor Station was not re-established until 9:04 a.m.

At 5:31 a.m., the local 911 emergency telephone operator received numerous calls from residents reporting a fire and the sound of an explosion. An off-duty EPNG employee who lived near the site also called 911 and reported a fire.

At 5:35 a.m., a controller again called the station lead operations specialist at home and indicated he suspected a possible pipeline failure. At this time the controller did not know which pipeline was involved. The specialist indicated he could now see indications of a fire in the early morning sky in the direction of the Pecos River Compressor Station and that he was on his way to the station.

At 5:44 a.m. a controller called the attended Keystone Compressor Station (57 miles upstream of the rupture) feeding gas into lines 1103 and 1110 and asked for the compressor to be shut down. The controller then

WORKSHEET

3-2

Use of contents on this sheet is subject to the limitations specified at the end of this document.  
P:\Buckeye, Town of (A2)\32940 - Town of Buckeye\Deliverables\Reports\001R Risk Inf. Assess. 07.26.07.doc

Privileged and Confidential  
Attorney Work Product

## Local Agencies

17

called the attended Eunice Compressor Station (53 Miles upstream of the rupture) feeding line 1100 and requested similar compressor shutdowns.

At 5:50 a.m. the controller called the attended Carlsbad Compressor Station (25 miles upstream of the rupture) feeding line 3191 to confirm compressor shutdown. It should be noted that even with the compressors shut down, the compressed gas inventoried in the miles of pipeline from the various compressor stations would continue to de-pressure out of the ruptured pipeline for some time.

At 5:45 a.m. the pipeline lead operations specialist was the first to arrive at the Pecos River Compressor Station near the accident site. This employee began closing transmission pipeline bloc valves downstream of the rupture, near the Pecos River Compressor Station, approximately one mile west of the fire. A block valve on line 1100 was closed first. A second pipeline operations specialist arrived and proceeded to assist in closing block valves on lines 1103 and 1110.

The downstream pig launcher valves that could permit gas to flow back up the pipeline toward the rupture were then closed.

At approximately 6:10 a.m. the station lead operations specialist arrived at the Pecos River Compressor Station and met the two pipeline operations specialists in the process of closing valves. The station specialist verified that the station had been properly shutdown and he assisted the pipeline specialists in closing the block valve from the north line 3191. This line not only fed into the station but also fed lines 1103 and 1110 via various cross connections.

After closing the block valves downstream of the rupture, the two pipeline operations specialists proceeded to drive to the west side of the Pecos River service bridge to view the fire across the river, but could not determine which pipeline had ruptured because of the size and intensity of the flame. The fire was estimated to be approximately 500 feet in height based on nearby suspension bridge tower support structures. The two men then drove across a low-water crossing in the river north of the rupture as heat radiation prevented them using the pipeline service bridge across the river near the rupture side. Because of the heat intensity, as well as limited right of way road access, emergency responders were instructed by EPNG to remain west of the Pecos River Compressor Station until EPNG personnel could bring the release situation under control.

At about 6:05 a.m., the two operators, carefully checking that they could tolerate the heat, left their vehicles and proceeded to close block valves on the east side of the river, approximately one quarter mile upstream of the rupture site. A block valve was first closed on line 1100 with no noticeable change in the fire's intensity. Next, block valves on lines 1103 and 1110 were closed with a noticeable reduction in fire intensity. The bypass valve on the line 1103 pig receiver was then closed and the fire subsided.

At approximately 6:21 a.m., 55 minutes after the initial rupture, operation personnel at the valves notified the gas control center that all appropriate valves were closed and that the fire was out.

As reported earlier, all twelve members of an extended family were either dead or dying from the ensuing fire. Six members of the family were found approximately 675 feet from the rupture. The remaining six family members were found further west of the campsite away from the fire as they had apparently jumped into the river in an attempt to escape the heat.

### 3.4 Federal Investigation of the EPNG Carlsbad Rupture

The National Transportation Safety Board's investigation into the fire indicated the force of the rupture and the violent ignition of the escaping gas created a 51-foot-wide crater about 113 feet along the pipe. A 49-foot section of the pipe was ejected from the crater in three pieces measuring approximately 3 feet, 20 feet, and 26 feet in length. The largest piece was found about 287 feet northwest of the crater in the direction of the

## Local Agencies

suspension bridges. Visual examination of the pipeline in the crater and the ejected pieces showed significant corrosion on the inside pipe surfaces and the pipe wall exhibited significant thinning. No significant corrosion was found on the outside pipe wall.

Pipeline 1103, the pipeline that ruptured, was constructed in 1950 with pipe purchased from Republic Steel that had been manufactured in accordance with American Petroleum Institute Standard 5LX, higher-test line pipe. The pipe was a 30" outside diameter, grade X52 (Specified minimum yield strength of 52,000 psi (This is a measure of the pipe's strength value which is not equivalent to its internal pressure) The pipe had a nominal wall thickness of 0.335 inch, with sections of heavier wall pipe at locations such as road crossing and block valve assemblies. The pipeline was operating at approximately 675 pounds per square inch, gauge (psig), at the time of the accident. The maximum allowable operating pressure from Keystone Compressor Station to the Pecos River Compressor Station had been established by EPNG at 837 psig, which is equivalent to a strength level of 72% of the specified minimum yield strength in the 0.335-inch-wall thickness pipe. (P. 16 PAR NTSB/PAR-03/01)

Cleaning pigs were run through line 1103 twice a year. But the specific section of line that ruptured had not been pigged because it contained a type of valve which prevents a pig from passing through it. It is important to note that on those portions of the line 1103 that were regularly pigged, solids and liquids were weighed and analyzed before disposal, with test results, including water concentrations and chemicals, provided to the EPNG chemistry laboratory in El Paso, Texas.

An earlier rupture, three years prior on line 1300, was caused by internal corrosion and generated a series of "spout pit" inspections on several segments of line 1100 and 1103 and other lines.

Line 1103, the ruptured line, had been inspected by aerial patrol nine days before the rupture, which occurred on August 19, 2000. Ground patrol inspected the lines the day before the rupture (August 18) and looked for field indicators of leaks such as dead or dying vegetation, discolored soil, erosion, or excavation near the pipeline.

EPNG officials stated they believed line 1103 was not transporting corrosive gas because the line was receiving "pipeline quality" gas and that unusual conditions, such as water in the pipeline, were not being observed at the pig receiver or the drip on line 1103. Gas quality standards were contained on EPNG's contracts with its gas suppliers but were not referenced in the company's corrosion control procedures. Corrosion coupons (pieces of metal with a specially prepared surface for measuring corrosion rates) or corrosion monitoring devices were not used in the ruptured section of 1103 because it was believed that the gas transported was not corrosive. EPNG, therefore, did not inject corrosion inhibitors into this line and since the monitoring program did not require ultrasonic testing be performed on the low points of the non-piggable portions of line 1103, none were performed before the rupture. Visual inspections of line 1103 that were exposed above grade did not identify internal corrosion in those sections.

EPNG acquired Tenneco energy in December of 1996 and formed El Paso Energy Corporation. In January 2000 El Paso Energy acquired Sonat, Inc. another national gas pipeline company. El Paso Energy Corporation then assembled teams of representatives from each pipeline company and tasked them with establishing best practices and producing a common operating and maintenance manual. The new manual was issued three months before the accident with a new Corrosion Control Manual issued one month before the Carlsbad accident. These documents are a model for how empirical procedures must be applied to detect internal corrosion including how flow velocity of gas affects liquids accumulation in a pipeline. However, prior to the issuance of the Corrosion Control Manual, EPNG's corrosion procedures were governed by its *Operating and Maintenance Procedures* manual (Section 201.2, "Corrosion Control," dated September 20, 1999), which referenced 49 CFR 192.451 through 192.491. Although these standards were specified by reference the manual was not as effective as the recently adopted Corrosion Control Manual, as it did not address the

## Local Agencies

factors that should be considered in determining whether transported gas could cause corrosion. While the types of contaminants (water, CO<sub>2</sub>, H<sub>2</sub>S and O<sub>2</sub>) were in their contracts for gas, none of these contaminants or their limits were mentioned in the corrosion control procedures. In addition, no guidance was provided concerning how these contaminants were to be detected other than visual inspection of a pipe after it had been removed.

From July 1999 to September 2000, the Federal OPS conducted eight safety inspections of EPNG under the system inspection pilot program. For each of these inspections compliance with internal corrosion control regulations were deemed by the federal regulators as "satisfactory," and noted that EPNG's internal audit program was working as designed.

For the 26 safety inspections of EPNG (conducted by OPS from June 1990 to September 2000, inclusive of the eight inspections just discussed), compliance with 49 CFR 192.602(b)(3) was noted as "satisfactory," "not applicable," "not checked." Before August 2000, there were no enforcement actions against EPNG for their program for not making construction records, maps, and operating history available to operating personnel.

Subsequent to the RSPA corrective action order, El Paso identified 60 pipeline segments on its system where the risk of internal corrosion was judged to be greatest and eight pipelines from this group were found to have corrosion. In six of these segments, the corrosion was deemed significant. An EPNG executive level oversight committee was formed to implement integrity management for all 46,000 plus miles of pipelines operated by El Paso Energy Corporation.

### 3.5 NTSB Findings from the EPNG Carlsbad Incident

In essence, EPNG was found to have not trained its personnel responsible for detecting corrosion or to implement corrosion control procedures. EPNG also was found to have failed in following its own procedures, failed to investigate corrosion, failed to consider and act upon several unusual operating and maintenance conditions affecting line 1103, failed to follow its own leak and failure reporting procedures, and failed to maintain an accurate design profile of line 1103 which would have helped EPNG identify low points where liquids could accumulate in the pipeline.

### 3.6 Transwestern's Phoenix Expansion Project Proposed Safety Program with Assessment of Pipeline Rupture Impact on the EIS

The following statements are offered as specific elements of Transwestern's safety program which underscore its commitment to implement (pipeline) integrity management required by federal regulation:

"... each pipeline operator must... establish an emergency plan that includes procedures to minimize the hazards in a natural pipeline emergency."

These procedures include:

- "Receiving, identifying, and clarifying emergency events such as gas leakage, fires, explosions, and natural disasters.
- Establishing and maintaining communication with local fire, police, and public officials, and coordinating emergency response.
- Emergency shutdown of system and safe restoration of service.

PROXIMA CONSULTING

# Local Agencies

- Making personnel equipment, tools, and materials available at the scene of an emergency.
- Protecting people first and then property and making them safe from actual and potential hazards.\* (TW UIS P. 4-198)

Other safety commitments include the promise to operate the pipeline according to DOT-approved standards and procedures, training all operating personnel in these standards and procedures, conducting periodic training seminars and reviewing operating and emergency procedures, implementing public liaison programs, etc..

Another feature of their operating routine put forward as a safety and reliability feature is the 24-hour, 365 day/year fully staffed gas control center located some 1160 miles away in Houston, Texas. While staffed area and sub-area offices are maintained along the pipeline right-of-way, it is the Houston center which monitors the system-wide changes to pressures, flows, and customer deliveries. It is the area and sub-area offices which are the initial responders to a pipeline emergency by dispatching contractor personnel. Transwestern freely admits the response time to a leak (or other emergency) could be up to 2 hours depending upon the time of day and location of personnel.

Another safety or "mitigating" feature offered is the "remotely controlled valve" which, when a sudden pressure drop is detected would isolate a section of pipeline from the rest of the system.

Still another feature of safety and reliability are the air and ground patrols which seek to identify leaks, evidence of pipeline damage, evidence of encroachment (on rights-of-way) or damage to erosion controls (measures) resulting from erosion or washouts. "The pipeline would be designed to be piggable, allowing for the use of smart pigs for internal integrity inspection."

Finally, Transwestern states the following concerning pipeline rupture:

"If a pipeline rupture were to occur after pipeline operation has begun, natural gas would percolate through the soil and rapidly dissipate into the atmosphere. The potential outcome would depend on the volume of natural gas released and whether an ignition source is available. A pipeline break could result in soil and debris being thrown from the area of the break, destruction of nearby vegetation, and in the case of ignition, explosion or fire causing injury or property damage."

### 3.7 Natural Gas Transmission Pipeline Rupture

So as to not underestimate the consequences of a pipeline rupture, some reasonable description is in order. Many people, including many engineers understand this to be as a clean break of a pipeline where two pipe ends may join suggesting a simple failure of welds or joint failure. Pipe does not typically fail in this way. High pressure, large diameter gas transmission pipelines are all capable of rupture failure in which a small anomaly (imperfection in the pipe or welds) which grows to a defect causing the pipe to literally break or shrapnel fracture within microseconds along the length of a pipeline segment. This phenomenon is characteristic of gas transmission lines versus liquid pipeline ruptures. Rupture fractures along a gas transmission line can propagate many feet along the length of a gas pipeline before the fracture energy dissipates. The highly compressed gas within these pipelines is the driver for this type of fracture. Such rupture failure leaves a major opening in the pipeline with highly compressed natural gas releasing at sonic speed from both ends of the remaining pipe.

"Regardless of the length of the rupture failure along the pipeline, all high pressure (i.e. high strength) large diameter gas transmission pipeline ruptures release gas as double bore failures. The fracture mechanics for certain types of anomalies (i.e. corrosion) have been well understood for many

PROXIMATE SHEET

# Local Agencies

decades, especially for gas transmission pipelines. No high stress steel pipeline is invincible to pipeline rupture, if a wrong anomaly or conditions become present." (Commentary and Risk Analysis for the Proposed Emeron Brunswick Pipeline Through Saint John, NB, Richard Kupnewicz, October 2006).

When rupture occurs in a gas transmission pipeline, gas is released in the order of 1,100 plus feet/second as the pipeline starts to de-inventory. The mass rate of gas release decreases with time, but is driven by the density of gas upstream of the bore. The mass rate of decay for the Transwestern Phoenix project is not known as the operator has not disclosed what the maximum future capacity of this pipeline is projected to be or could be, given various gas demand scenarios. The peak mass rate of release does decay over time with the slope of the decay dependent upon a variety of system factors. It is assumed that at the operating pressures proposed, the Transwestern Phoenix line could be on the order of 30-40 tons of gas for every mile of pipeline. For a "pipeline at an operating pressure [MAOP] of 1100 to 1200 psig, it will take a significant period of time to de-inventory the pipeline during a rupture failure. Most ruptures of the kind described ignite. The only effective emergency procedure is to extinguish the flame by fuel cut-off via pipeline valve closure and allowing the flame to burn itself out from lack of fuel. The placement of remote operated valves can reduce total blowdown or de-inventory time, and additional valves can reduce this time even more. Even so, "Valve placement" does not reduce the potential impact zone associated with the high heat fluxes (the amount of heat transferred across a surface unit of area in a unit of time) related to these ruptures. Multiple valves could reduce blowdowns such that first responders could reach affected areas within ten or fifteen minutes, yet "such valving does not reduce the potential impact zone so important to consider at the time of early planning of pipeline routing. The "two-hour delay" response to a leak cited in the draft EIS may be the result of a cautious approach to response, but even in a remote area, this delay time may allow for a fairly complete de-inventory of a pipe segment with maximum possible damage to people and property.

### 3.8 Heat Flux Phases of Pipeline Rupture

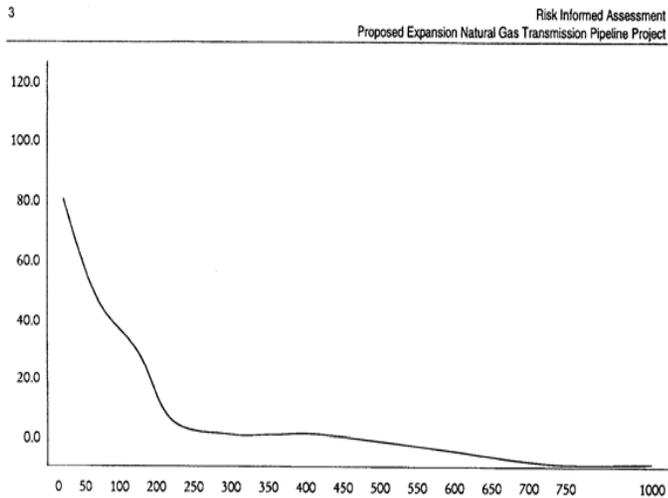
As described in the Carlsbad/EPNG case, the high mass rate of release and sonic velocity of escaping gas, the momentum forces for a rupture release can cause large craters formed by the gas jetting out the pipe bones (51 feet deep with 113 feet in length as measured by the NTSB site investigators). Horizontal momentum of the jetting gas is then transformed due to the buoyancy of the gas mass, into a vertical dissipating gas cloud. When this mass is ignited, two heat phenomenon occur: a high heat flux "fireball" bursts with initial ignition followed within a minute by less rapid combustion vertical "jet fire" associated with decaying heat flux radiation.

"A classic example demonstrating how a rupture can engulf unsuspecting victims that are too close to a pipeline rupture is the July 30, 2004 gas transmission pipeline rupture failure in Ghislenghien, Belgium (40 inch outside diameter with 0.5 inch wall thickness gas transmission pipeline operating at 1160 psig). Five of 16 twenty-four deaths (150 additional casualties) associated with this pipeline rupture failure, were fire department personnel who had responded to an initially reported gas leak emergency and were setting up safety barricades some distances from the leak."

The pipeline failed during an operating pressure increase on a pipeline that had been damaged by a third party several weeks earlier.

One example of a heat flux versus distance plot for a large diameter high pressure gas pipeline can be drawn as follows:





For the size pipeline considered by Transwestern Phoenix project, the potential impact area for a rupture assuming early ignition is well over 1100 feet, extending as far as 1800 feet. It should be the responsibility of Transwestern to develop and defend a heat flux distance plot capturing early ignition. This information is critical to pipeline routing decisions.

### 3.9 The Consequences of Pipeline Rupture and Pipeline Routing Decisions

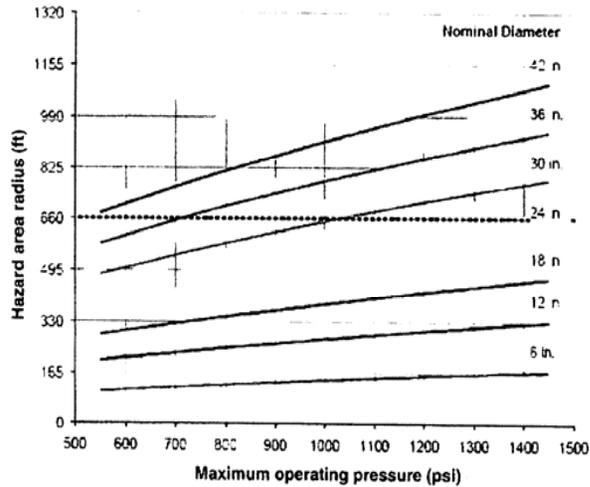
Key points that can be adduced from the preceding discussion include the following:

- Emergency response planning (EPP) is not useful as a credit against the risks associated with pipeline rupture events. No matter how effective the EPP, response cannot be fast enough to save those most at risk in the extreme heat flux zones associated with the most likely early ignition gas release scenarios.
- Details from Transwestern are warranted to support a thorough understanding of the rupture mass release over time curve for the pipeline segments within the Town of Buckeye. The specific pipeline capacity throughput that defines this curve should be clearly stated. In the meantime, the following is one approach to identifying the proposed impact and area radius as determined by various pipeline diameters and pressures (NAS, TRB Report 281, P. 112, Citing Stephens, 2000)

FIGURE D-1

SECRET

II-447



This graphic was developed by C-FER Technologies which developed a model that examines isometric thermal radiation distances to determine a burn radius and a 1% fatality radius from a natural gas pipeline break. It is important to note that the Office of Pipeline Safety and FERC have also utilized C-FER models for regulatory purposes.

An assumption of the model is that risk can be expressed as the product of failure probability and failure consequences, and reliability is the complement of failure probability. The model incorporates three factors: a fire model that relates the gas release to the intensity of the heat, a model that provides an estimate of the amount of gas being released as a function of time, and a heat intensity threshold. The model can be used to determine a zone of impact for pipeline fire. The equation used in the model relates the diameter and operating pressure of a pipeline to the size of the affected area, assuming what I am calling the controlling safety case which is a full-bore pipeline rupture.

While thermal radiation isopleths are typically irregular in shape because of obstructions, nature of the gas discharge, and delays in ignition, the C-FER model calculates the degree of harm to people from thermal radiation based upon the thermal load received.

The model makes other assumptions including the belief that people will (in the open) remain in a fixed position from 1-5 seconds then move at approximately 5 miles per hour toward shelter (an assumption challenged by other analysts), and that the shelter will be available within approximately 200 feet of the person's initial position. Heat flux is assumed to cause burn injury between 1,000 and 2,000 Btu/h/ft<sup>2</sup> (3.2 and 6.3 KW/M<sup>2</sup>) depending upon the time required to cause blisters. The heat flux for fatal injury

BUCKEYE TOWN OF

II-448

# Local Agencies

(where 1 Person in 100 would not survive the thermal flux) is calculated to be 500 Btu/h/ft<sup>2</sup> or (15.8 kw/m<sup>2</sup>). Other calculations are made for varying thresholds of injury.

As is demonstrate by Figure D-1 a 36" to 42" pipeline operating at 1100 to 1200 psig would require a nominal hazard area radius of between 980 feet to 1140 feet. However, even this distance may be too conservative for reality: On July 30, 2004 a natural gas pipeline explosion in Ghilsenghien, Belgium ruptured/ignited and killed 24 people and left 132 injured. This explosion melted or burned everything within a radius of 1,312 feet.

II-449

# Local Agencies

**PROCESSED**

**3-10**

Use of contents on this sheet is subject to the limitations specified at the end of this document.  
P:\Buckeye, Town of (A2)132940 - Town of Buckeye\Deliverables\Reports\001\IR Risk Inf. Assess. 07-26-07.doc

*Privileged and Confidential  
Attorney Work Product*

RISK INFORMED ASSESSMENT  
PROPOSED EXPANSION NATURAL GAS TRANSMISSION  
PIPELINE PROJECT

4. THE MULTIPLE VARIABLES INVOLVED IN NATURAL GAS  
PIPELINE INCIDENTS

It is worth adding more description of principal pipeline accidents to drive home the multiple variables involved in the underlying causes of such accidents as well as their consequences. The National Transportation Safety Board has looked into well over 100 pipeline explosions which required special investigative reports between 1969 and 2003. Over 65 of these reports concerned natural gas transmission pipeline accidents and almost 20% (some 12-15) of these accidents were investigated between 1990 and 2003, a thirteen year period during which regulatory focus on the U.S. natural gas pipeline industry was arguably higher than the previous twenty years,

**4.1 Edison New Jersey Incident**

The Texas Eastern Transmission Corporation owned 36" natural gas transmission pipeline located near Edison, New Jersey ruptured catastrophically within the Quality Materials, Inc. asphalt plant property on March 23, 1994. The operating pressure of the pipeline was approximately 970 psig and at rupture, the releasing gas excavated soil from around the pipe propelling shrapneled pipe, rock, and other debris some 800 feet. The gas ignited within two minutes of rupture with Thermal Flux impact to building roofs at an apartment complex some 300 feet from the rupture. Alerted to the debris and rock falls on the apartment roof, over 1500 occupants fled the burning building. The ensuing fire destroyed eight buildings with no fatal injuries but over 100 injured people were treated at local hospitals and property damage was estimated at over \$25 million.

The original NTSB report (PB95-915-501) which is unavailable online, stated the probable cause of the rupture was mechanical damage to the outside surface of the pipe which reduced its wall thickness and created a crack that grew to critical size over time. Contributing to the accident was the inability of the pipeline operator to promptly stop the flow of natural gas to the rupture. Post-accident investigation revealed "teeth marks" on the pipe, possibly caused by excavation equipment. Further excavation of the site exposed a great amount of debris around the pipe including a crushed Ford Ranger pickup truck that had been reported stolen in 1990.

**4.2 Post-NTSB Appeal by Texas Eastern Corp.**

A post-NTSB analysis petition to reconsider one of the original findings is useful to anyone involved in making transmission pipeline routing decisions. The nature of the appeal (re-consideration of findings) deals with whether the gauges or dents on the pipeline surface at or near the point of rupture were themselves causes of the rupture. While the probable cause of the rupture - mechanical damage to the exterior surface of the pipe that reduced pipe wall thickness that ultimately grew to critical size - was not disputed by Quality Materials, Inc., the petitioner. The apparent purpose of the petition by the landowner and easement grantor to Texas Eastern Transmission Corporation (TETC), who owned the pipeline, was to establish that dents, gauges or other mechanical marks on the pipelines were known to TETCO inspectors before the rupture

BRONKHORST

II-450

occurred. TETCO admitted that their consultant's inspection logs showed a "dent at or near the rupture site" in 1986, some seven years before the line failed, but that the dented pipe surface did not represent a significant loss of pipe wall strength. Even so, TETCO had scheduled this line (line 20) to be pigged in 1994 because of the importance of the line to service, its class location (class 3), and the fact multiple minor dents and gauges were recorded on the pipe during the 1986 inspection. However, the March 1994 rupture preempted this effort. The NISB found that TETCO employee performance was not a factor in the pipe damage and that all inspection and operating personnel were properly experienced and trained. In addition, even though the pipe had been damaged in the years previous to the March 1994 failure, TETCO often operated line 20 at MAOP without incident. It was the finding of NBB that line 20 did not fail as a result of human error, or as a result of exceeding MAOP, but that line 20 failure was caused by "excavation equipment at some undetermined time." If there was a weakness in TETCO's safety/operating procedures, it was the absence of awareness that excavation activity on Quality Material's property could endanger the pipeline. At the same time, Quality Management "did not advise its (own) employees about the presence of or potential hazard posed by the pipeline within its property (nor did Quality Materials implement pre-cautionary measures to protect line 20 from excavation damage by employees." (NISB Report: PAR-95-01, May 18, 2001.

Multiple contractors working in the vicinity of this pipeline over a period of years without significant response from either the pipeline owner/operator or the easement grantor helped create the condition for catastrophe despite a growing regulatory environment between 1980-1994 which included a focus on third-party damage potential.

#### 4.3 An Historical Natural Gas Transmission Pipeline Incident: Houston, Texas, 1969

On September 9, 1969, at 4:40 p.m., a 14-inch natural gas pipeline operating at 739 psi ruptured in a residential area of Houston, Texas. The sonic boom caused by releasing gas alerted adjacent residents whose backyards were adjacent to the pipeline easement approximately and within 50 feet of the ruptured line. While people evacuated, the escaping gas ignited some 8 to 10 minutes after the rupture. The explosion destroyed 13 homes, injured 9 residents, two seriously. The jetting fire burned for over an hour and a half until all valves were closed and the pipe de-inventoried. Some 106 homes were damaged. This section of pipe was part of a 194 mile transmission pipeline constructed in 1941. The failed pipe wall was seam welded and was 0.25 inches thick. The operating pressure was 714 psi, with a design pressure of 2142 psi. When the failed section of pipe was constructed, the subdivision had not been built and the pipeline route was in open country. Homes were built as close as 24 feet from the buried pipeline with very few residents aware of the proximity of the pipeline to their homes. In this failure, the pipeline operator was in the process of tying in a new line with gas compressed into the downstream sections of pipe while the tie-in was completed. Pressure regulators failed to react to the building pressure downstream such that MAOP was exceeded (University of New Castle, UK, Pipeline Safety Incidents Overview, undated).

#### 4.4 Other Incidents and Annual Incident Totals

Additional pipeline incidents are included in the attachment Section of this assessment. Many of these incidents include pipelines which carry other types of petroleum and gas products. This report has concentrated upon gas transmission pipelines. Even so, these incidents dramatize the almost evolutionary steps toward safety that both the industry and government have taken toward higher safety standards.

RISK INFORMED ASSESSMENT  
PROPOSED EXPANSION NATURAL GAS TRANSMISSION  
PIPELINE PROJECT

5. NATURAL GAS TRANSMISSION PIPELINE VULNERABILITIES  
TO RISK

"Nearly half a million miles of oil and gas transmission pipeline crisscross the United States." (Congress Research Service Report RL 31990) Integral to the U.S. energy supply, these pipelines are linked to other critical infrastructure including power plants, airports, military facilities, and cities. While considered safe from the perspective of accident frequency, volatile and flammable materials transmitted have the potential to cause injury to the public and to the environment. Pipeline networks are widespread, running through urban and rural land uses. It is important to realize the pipelines are vulnerable to accidents as well as to intentional impact by human agency.

**5.1 The Pipeline Industry**

Setting the important category of liquid pipelines aside for purposes of this assessment, it is estimated that over 200,000 miles of interstate natural gas transmission pipelines operate in the U.S. Some 85,000 miles of intrastate pipelines are in operation, and some 40,000 miles of gathering lines connect gas wells to processing facilities. Some 100 systems make up the interstate network with 90 systems composing networks within the individual states. These larger systems fee over one million miles of regional pipelines across over 1,300 distribution networks.

Between 2000 to 2004 gas pipelines reported an annual average of 17 fatalities through a variety of causes including third party excavation, corrosion, mechanical failure, control system failure, and operator error. Natural causes such as floods and earthquakes can also cause pipeline failures.

**5.2 Pipeline Security Risks**

Pipelines have proven to be vulnerable to vandalism and attack with firearms, explosives or by other physical means. Some pipelines may be vulnerable to "cyber" attack on computer control systems or attacks on electricity grids or telecommunications networks (Skolnik, Seattle Post Intelligencer, September 2, 2002).

Pipelines, whether liquid or gas, have been attacked outside the U.S. Rebels have bombed Colombia's Cano Limon oil pipeline over 600 times since 1995. In 1996, the Irish Republican Army was stopped by London police in a plan to bomb gas pipelines and other utilities throughout the city. A plan by the Ku Klux Klan in 1997 to bomb gas storage tanks in Texas as a diversion from other criminal activity was stopped by Texas police. Since September 11, 2001, federal warnings about Al Qaeda have mentioned pipelines specifically as potential targets in the United States. In January 2006, federal authorities acknowledged the discovery of a detailed posting on a website allegedly linked to Al Qaeda that encouraged attacks on U.S. pipelines using weapons or hidden explosives. The Trans Alaska Pipeline has been the focus of several actual and planned attacks since 1999 including one attack involving a high powered rifle.

REGIONS AND DISTRICTS

II-452

### 5.3 Pipeline Integrity Risks

As recently as 2005 some twenty-two threats to pipeline integrity were identified as having the potential to compromise pipeline safety. These threats include the following:

#### Twenty-Two Pipeline Integrity Risks of Concern

1. External corrosion
2. Internal corrosion
3. Strength corrosion cracking
4. Defective pipe seam
5. Defective pipe
6. Defective pipe girth weld
7. Defective fabrication weld
8. Previously damaged pipe
9. Vandalism
10. Incorrect operating procedures
11. Cold weather
12. Lightning
13. Heavy rainfall events or flood damage
14. Earth movement
15. Miscellaneous
16. Unknown
17. Wrinkle, bend or buckle
18. Stripped threads/broken pipe
19. Gasket O-ring failure
20. Control/reliability of equipment malfunction
21. Seal pump padding failure
22. Damage inflicted by 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> parties

How pipeline companies manage these risks varies but all operators must comply with federal design, construction, operation, maintenance, and spill/release response regulations through the Natural Gas Pipeline Safety Act of 1968 (P.L. 90-481) and other public laws enacted through 2005. The federal office of pipeline safety (OPS) deploys some 400 inspectors (as of 2006) and other personnel to enforce the regulatory standards. The OPS inspects, investigates, and maintains ongoing communication with natural gas facilities operators within a annual budget of approximately \$76 million.

Between 1994 and 2004 the OPS took 1,430 enforcement actions against pipeline operators (Governmental Accountability Office, GAO-04-80, 2004). Civil penalties against operators in 2005 exceeded \$4 million.

Importantly, the Pipeline Safety Improvement Act of 2002 (P.L. 107-355) is an effort to support OPS initiatives and to provide a foundation of safe pipeline operations in a variety of areas including high consequence areas. Among its among provisions, this law requires operators of regulated gas pipelines in high consequence areas to conduct risk analysis and implement integrity management programs similar to those required for oil pipelines. The Act also authorizes over \$100 million for research and development in pipeline integrity, safety, and reliability, and security, whistleblower protections, public education and employee training/qualification programs.

Currently, responsibilities for pipeline safety and security have been divided between the Transportation Security Administration, and the OPS, a division which has been questioned by Congress.

For those attempting to determine how regulatory frameworks and free market operators combine to generate safe pipelines, the best that can be said is that the pipeline safety and integrity are evolving features of an existing and rapidly growing system.

# Local Agencies

II-454

CONFIDENTIAL

RISK INFORMED ASSESSMENT  
PROPOSED EXPANSION NATURAL GAS TRANSMISSION  
PIPELINE PROJECT

6. THE PROBLEM OF LOCATING A NATURAL GAS  
TRANSMISSION PIPELINE IN A DEVELOPING AREA

The Town of Buckeye consists of multiple existing, developing and planned communities which have proceeded with implementation without considering the consequences of a natural gas transmission pipeline located essentially through the center of community development.

One over-arching lesson concerning transmission pipelines is that their safe operation depends upon a variety of technological, corporate, and regulatory frameworks that are still in the process of understanding the safety implications of the technology these frameworks manage. More precisely, a safe pipeline is still an end to be achieved by these mutually cooperating frameworks.

Various industries differ in their concept of what "safety" is. There is the example of the Federal Aviation Administrator who, when interviewed about the Paris, France DC-10 accident involving the infamous rear baggage door, and the two precursor incidents, said, "Of course it (the door) is safe, we certified it." This was a non-facetious response. The essence of the concept of aircraft safety is fault hazard analysis in which each aircraft component is assigned a reliability target. Once these targets are achieved, an aircraft as a whole meets the agency failure rate requirements and can be deemed "safe".

The chemical process industry views safety somewhat differently, as illustrated by a former president of Dupont who once said, "My company has had a safety program for 150 years. The program was instituted as a result of a French law requiring an explosives manufacturer to live on the premises with his family."

In the evolution of the concept of "safety" it is generally regarded as non-controversial that the safety of a system or facility includes the spectrum of risk management. Safety includes the hardware and associated technologies, and it includes attitudes and motivation of designers, and production personnel, employee/management rapport, the relation of industrial associations among themselves and with the government who regulates them, human factors in supervision and quality control, documentation on the interfaces of industrial and public safety with design and operations, the interest and attitudes of senior management, the effects of the legal system on accident investigations and exchange of information, the certification of critical workers, political considerations, resources, public sentiment, and many other (some non-technical) vital influences on the attainment of an acceptable level of risk control. Many of these elements involve their own levels of certitude and uncertainty.

There is dual problem then associated with the Transwestern pipeline proposal. First, it is proposed to be located without determining whether the local population is prepared to accept or understand the associated risks and concept of safety specific to pipeline technology and operation. Second, in its proposal it assumes without question or proof that the pipeline's presence is or will be essentially risk free.

As was indicated in section 2.0 of this assessment, the Transwestern facility, once built, will be subjected not only to the range of uncertainties associated with technical failures mentioned herein, but it will also be subject to the ongoing construction common to subdivision and new town development across the easement into which the pipeline will be placed. Such construction includes buried water and wastewater infrastructure

BRUNNEN & CALDWELL

REF-1

II-455

which will exceed in size and scope of impact that of the pipeline's construction. Many of these facilities will be deeper than the pipeline's proposed elevation, and will require ongoing maintenance and repair and will be subject to operational failure common to water and wastewater transmission lines. Such activity will be commonplace in the development corridor for many years. Without a complete prohibition on construction within, near or under the easement, it is unreasonable to expect that some impact to the pipeline will not occur whether intentionally or accidentally, through direct or indirect effect of human activity.

II-456

PROXIMATE

## Local Agencies

## Local Agencies

17

The attachments to this letter are too voluminous to include in this EIS. They are available for public inspection from the FERC's Office of External Affairs at 1-866-208-FERC or on the FERC Internet website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP06-459). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, contact (202) 502-8659. **The Category/Accession number for this submittal is 20070727-5021.**

II-457