

## **BIOGRAPHICAL INFORMATION**

J. Stephen Ellis  
Business Development  
Coler & Colantonio, Inc.

### Specific Responsibilities

Mr. Ellis joined Coler & Colantonio in July 2004 and is responsible for sales, marketing and business development relating to their pipeline products and services.

### Past Experience

Prior to joining Coler & Colantonio Mr. Ellis served as Vice President of Corridor and Facilities for Tobin International focusing on pipeline and corridor-based industry opportunities. His primary focus was on the development of new products and service opportunities. He managed third party and governmental relations, plus provided consulting services for those industries. For 14 years Mr. Ellis worked for Tenneco Energy as Technical Manager and Supervisor of Pipeline Operations. Mr. Ellis has published the following: "Case Study: GIS Developed for Kern River Gas Systems", Pipeline Industry magazine, Part 1 - April 1993, Part 2 - May 1993; "The Kern River Information Network", Petro Systems World magazine Winter 1994; "Kern River - An Innovative SCADA and Information Management Project", AM/FM International SCADA Letter, Winter 1994. Quoted/Referenced: "The Emergence and Convergence of AM/FM/GIS and SCADA Systems", AM/FM International SCADA Letter, Spring 1994; "EL PASO ENERGY'S - FIELD FORCE AUTOMATION PROJECT", AM/FM International Conference Proceedings 1997. He is also a noted presenter at industry conferences.

### Educational Information

University of Houston; Bachelors of Business Administration

### Professional Memberships

Past President of GITA Texas Gulf Coast chapter  
Member of International Right of Way  
Member of Texas Gas Association

## **BIOGRAPHICAL INFORMATION**

Richard A. Lindell  
Pipeline Services Manager  
Tobin International, Ltd.  
A Division of P2 Energy Solutions

### Specific Responsibilities

Mr. Lindell joined Tobin International in September 1993. He coordinates and directs the production of data and services to meet the needs of the pipeline industry. Projects vary in both size and complexity; from data conversion and custom maps to the creation of a fully integrated pipeline Management Information System.

### Past Experience

Mr. Lindell held a series of increasingly challenging positions with NIMA (formerly the Defense Mapping Agency) from 1978 to 1992. Accomplishments during this time include the design and development of new topographic map product specifications, graduation from the Agency's "Executive Leadership Program," and successful implementation of the Agency's new Data Integration Management Information System into the Office in San Antonio.

### Educational Information

M.S. - Cartography, University of Wisconsin  
B.S. – Geography, University of Wisconsin, with a minor in Geology

### Professional Memberships

Former member of the American Congress on Surveying and Mapping  
Former member of the American Society of Photogrammetry and Remote Sensing

## **BIOGRAPHICAL INFORMATION**

Arthur J. Sainz  
President, A. Sainz & Associates Inc  
Audience Index Marketing

### Specific Responsibilities

Mr. Sainz founded the company in September 1979 and incorporated as A. Sainz & Associates Inc, dba Audience Index Marketing, in April 1980. AIM is chartered in California as a business management and database marketing service company. Mr. Sainz's responsibilities are broad spectrum and include all aspects of the company operations.

### Past Experience

Over the past 24 years Arthur Sainz has developed Audience Index Marketing as a full service direct mail agency and registered print brokerage firm to provides database and printing services for the transportation, insurance, banking, and publication industries as a qualified SRDS and DMA List Brokerage firm. Audience Index is registered as an Authorized Affiliate Merchant of the United State Postal Service products and processing, thus assuring that clients earn the maximum postal discounts as their audience qualifies. Mr. Sainz's first mail campaign with the pipeline industry was in Sept 1989 with Harte Hanks Direct Marketing, where he supplied all audience assemblies and business database selections for the target geography. Audience Index continued working for 11 years with pipeline mail campaigns and partnered with Tobin International in 1998 for all pipeline turnkey mail services, return mail response tracking and survey tabulations services for audience measurement and identification of respondents.

### Educational Information

B.S. - University of Illinois, Tabor School of Business Management

### Professional Memberships

Standard Rates & Data List Brokerage firm since 1980  
Direct Marketing Association member since 1982  
National Agri-Marketing Association, Sacramento chapter since 1983  
American Marketing Association, Sacramento chapter since 1986  
USPS Postal Customer Council, Western District, since 1990  
Authorized Affiliate Merchant of United States Postal Service 1993

## **PUBLIC AWARENESS NOTIFICATION: IS IT WORKING?**

Joint Collaboration by:

J. Stephen Ellis  
Coler & Colantonio, Inc.  
26715 Maplewood Drive  
Spring, Texas 77386

Richard A. Lindell  
Tobin International, Ltd.  
A Division of P2 Energy Solutions  
1355 Central Parkway South, Suite 500  
San Antonio, Texas 78232

Arthur J. Sainz  
Audience Index Marketing  
2893 Sunrise Blvd, Suite 202  
Rancho Cordova, CA 95742

### **ABSTRACT**

Over the past few years there has been much talk about the American Petroleum Institute's Recommended Practice 1162 for Public Awareness Programs for Pipeline Operators and its impact on the pipeline industry. Most companies have had some sort of Public Awareness Notification program, whether it was doing annual mail outs or conducting personal door-to-door campaigns. The industry has been trying to get the word out, but the question is "Is It Working?". This presentation will suggest some processes that can be used to evaluate the effectiveness of the program. The presenters will discuss the use of reply cards and how they can be used to identify areas along the pipeline route that need to be addressed, such as right of way issues or concerned public opinion. This presentation will also highlight areas of data integration that can be used to determine the effectiveness of a pipeline company's public education program. How do One-Call Tickets, Internal Inspection Data, Integrity Planning and Population Demographics relate to Public Awareness?

### **INTRODUCTION**

#### Public Awareness Programs

Pipeline Awareness programs are not what they used to be. Today, to be in full compliance, you must have an integrated approach. Therefore, more people must be involved across the organization, such as Executive Management to set the policy for the entire organization, Public Relations needs to make sure the message is communicated consistently internally and externally, Human Resources will be responsible for employee

training, Field Operations needs to be able to execute the policy, and Compliance assures that the policy is carried out.

The integrated approach involves data as well as people. The various departments need to be able to access and analyze the data that can be used to determine the effectiveness of the program and if changes are necessary. One-Call Tickets, Internal Inspection Data, Integrity Planning and Population Demographics all relate to Public Awareness. This is a cultural change for many pipeline operators, but this proactive approach should benefit the company and the public with safer pipelines, and a reduction in costs related to repairs and remediation.

### **OVERALL WORKFLOW FOR PUBLIC AWARENESS NOTIFICATION PROGRAMS**

GIS Spatial analysis can be an effective tool to determine the individual addresses for the various Stakeholder Audiences. There are aspects of the spatial data used in the GIS Spatial Analysis for determining the affected audiences that directly affects the level of success. In addition to the spatial accuracy of the corporate and/or commercial data sets, pipeline operators and spatial analysts need to consider the currency, and completeness of the other source data. There are a series of questions that the pipeline operator or spatial analyst should consider:

#### Buffer Size and Data Accuracy

- The accuracy of the pipeline route itself is the first consideration. Is the accuracy of the pipeline centerline classified as “Good” according to the NPMS standard, meaning that it is within 500’? In this case, if the intent is to reach an audience 660 feet on either side of the pipeline route, then the use of a 660’ buffer means that you will not assure capture of the audience beyond 160’ from the pipeline centerline. The operator needs to take pipeline centerline route accuracy into consideration when determining the size of the buffer.
- What is the accuracy of the US Postal Service (USPS) 5-Digit ZIP code polygons, Carrier Route polygons or ZIP+4 centroids? Depending on the source, data can range in accuracy from +/- 40 feet to +/- 500 feet.
- If using geocoded addresses, what is the spatial accuracy of the landbase upon which the street addresses were geocoded into latitude/longitude coordinates? Depending on the source, data can range in accuracy from +/- 40 feet to +/- 500 feet.
- You must also consider that street addresses along a street centerline do not represent the actual location of the business or residential structure for that address. One can conclude that there is a closer relationship between the geographic location

of the street address and the structure in those areas where there are smaller lot sizes. Thus the geocoded addresses for urban areas are generally closer to the actual structure locations than they would be for more rural areas.

- One may also want to consider the pipeline commodity and associated risks that impact the selection of the buffer size. Consider the impact zone based upon the product much like you do in performing your HCA Analysis in developing your Pipeline Integrity Plan. You may want to include the areas that can be affected by a spill or release to be involved in your Program. Those can be an extended area beyond your buffer.

The answers to these questions will help the pipeline operator or spatial analyst determine the appropriate size of the buffer to use when determining the addresses of the audience for the Public Awareness Program.

### Data Currency

Data currency is another important factor. How current is the data and how often is it updated? Pipeline operators should review the currency of the pipeline centerline route, US Postal Service data, street landbase data and associated commercial and postal address datasets. For example, if the data is updated only annually (i.e. the Yellow Pages) is the data a fresh version, or has time passed and experience indicates that it is too old to be usable, or should you consider another data source that has a better defined maintenance process?

### Data Completeness

Investigate how the information is compiled. One should also ask if the data set is comprehensive. Does it provide complete coverage meeting the intended use? Are specialized commercially available databases used to ensure thoroughness and completeness? For example, not all excavators advertise in the Yellow Pages, and if you are attempting to reach farmers that perform deep plowing, databases of farmers participating in Federal Farm Program subsidies may be a better source than lists of people that buy seeds from seed catalogues.

The One-Call excavator list is a good source to supplement your excavator audience list, but beware that this may not be complete enough to catch all excavators. You may need to include additional commercial databases that focus on trade organizations or financial sources such as Dunn & Bradstreet.

### Address Deliverability

Address correctness is an important issue. The new U.S Postal Service Delivery Point Verification system (DPV) ensures that all of the addresses in the list are valid addresses. This will give you an indication of the quality of the sources used to determine addresses. The DPV system also appends two additional barcodes for automated mail sortations

down to the Letter Carrier route. Undeliverable mail represents missed audience members, which relates to non-compliance with API RP 1162.

### GIS Methods of Address Selection

One approach for acquiring individual addresses for the mailing list is by performing a higher-level acquisition of geocoded addresses that can then be spatially intersected with a buffer to determine the narrowest geographic audience. The economics of this approach may prove to be cost prohibitive due to the cost of acquiring and geocoding a larger number of addresses than what will be actually utilized in the final mailer audience. This approach has several risks. The spatial analysis, or buffer selection, may exceed the actual spatial accuracies of the data. Spatial analysis with a narrow buffer on spatially inaccurate data will generate faulty results. Also, the geocoded addresses are not the actual business or residential structure locations, but rather address locations along an address range of a street centerline. Depending upon the lot size, addresses of business or residential structures may be erroneously included or excluded from the desired audience list. One advantage of geocoding individual addresses is that they may be used for additional applications, such as Pipeline Classification and HCA Analysis for gas pipelines. One could look outside of the immediate residential or commercial addresses and consider geo-coding the emergency responder addresses and their contact information for areas along the pipeline route. That way you will know who to contact in a given area along your pipeline route in case there is an incident. Additional contact and tracking information can be appended to these addresses for future audit support, such as when meetings are held and what information is provided.

Another approach for acquiring individual addresses for the mailing list is to select addresses based upon the 9-Digit ZIP codes rather than individual geo-coded addresses. This approach is not as aggressive in narrowing down the address list to the target audience, but it has several advantages. Primarily, it applies the same spatial analysis of points intersecting the buffer, but it does this in such a way that the accuracies (or inaccuracies) of the spatial data (pipeline route, ZIP code and Carrier Route Data) create a more conservative address list. This approach also generates postal savings due to qualifying for saturation mailing rates.

There is a balance that must be sought. Pipeline Operators need to determine the narrowest possible address list to reduce printing costs. But you don't want to be so aggressive in narrowing the list that the audience list is incomplete, and you miss some of the intended audience, or you consume the savings in printing costs by paying higher postal fees.

### Address Databases

No single list source of addresses will provide all Stakeholder audience groups, consequently, you need to use several commercial and specialty databases to assemble the mailstream audience and then unduplicating the addresses to omit repeated addresses.

## **DATA INTEGRATION**

In order to understand how successful the Public Awareness Program is, you have to understand the relationships between the various pipeline work processes and data sources, such as:

- Aerial and Foot Patrol Reports
- Direct Assessment Reports
- Foreign Line Crossing Reports
- Internal Inspection Reports
- O&M Reports
- One-Call Tickets
- Pipe Coating Reports
- Pipeline Release Consequence Areas
- Population Demographics
- Repair/Replacement Reports
- Response cards

Pipeline Operators should establish or confirm the existence of the workflows and checks and balances to prepare the foundation of the metrics used to evaluate the effectiveness of your program. Public Awareness now is part of an enterprise data issue. You can't operate your Public Awareness Program in a vacuum. These processes may be reviewed by the DOT Inspectors to determine the completeness and accuracy of the information gathered, and that the processes are in compliance with regulations.

### **METRICS FOR EVALUATING THE EFFECTIVENESS OF THE PUBLIC AWARENESS PROGRAM**

In order to measure the effectiveness of your program you need to establish a baseline that will be used to calculate the success of subsequent time periods. These are some areas that you may want to focus on to include the following work processes and data sources.

#### One-Call Tickets

One of the most effective ways to evaluate your Public Awareness message is to make sure you are receiving One-Call notices for all excavations performed along your pipeline route. You also need to check how many emergency notices you are receiving or if you are seeing activity with no prior notice. Your One-Call Center can provide various reports relating to emergency tickets. You also need to ensure that all company-initiated digs have corresponding One-Call tickets. Operators should track seasonal variations in volume of One-Call tickets. This can be used to determine optimal timing for notification as well as provide an indication of the success of education of the public.

### Aerial and Foot Patrols

Operators should analyze Aerial and Foot Patrol Reports for problem areas along the route of the pipeline that may need increased emphasis in Public Awareness. Look for patterns and relationships for the same geographic areas identified in One-Call tickets and Aerial/Foot Patrol Reports at both the single point and One-Call Service area perspectives. If digging is reported along the pipeline and you have not received a prior One-Call ticket, you need to research the issue and possibly adjust your message, or do a follow up mailing, or possibly see if you need to expand your audience lists.

Operators should specifically track the number of digs without associated One-Call tickets within One-Call service areas. If the program is working effectively, you should see a low number of these occurrences. You should track this on a monthly basis and look for trends that may indicate that the timing of the delivery of the message may need to be adjusted for maximum effectiveness, or perhaps that the stakeholder audience was incomplete.

### O&M Reports

Operators should compare the Operations and Maintenance (O&M) Reports with One-Call tickets. O&M Reports include the following: Repair/Replacement, Pipe Coating, Foreign Line Crossings, Internal Inspection and Direct Assessment Reports. If you are seeing pipe damage through your O&M Reports and you don't see One-Call tickets relating to the potential damage, then you need to research the source of the dig and get an understanding as to why a ticket wasn't opened, and see if there is an impact on your Public Awareness Program.

### Population Demographics

Make sure that your message is understood. Check demographic data to see if you need to be communicating in another language. According to the Modern Language Association\*, 7% of the respondents to the 2000 Census, above the age of 5, do not speak the English Language at all. Pipeline Operators may need to tailor the message for regional audiences. Your local employees may have knowledge of these regional areas where other languages should be considered.

\* "Modern Language Association" website, [www.mla.org/census\\_about](http://www.mla.org/census_about), 04/12/2004.

## Response Cards

Pipeline Operators should consider the use of Business Reply response cards to help measure the effectiveness of their Public Awareness Program when sending the message out via the US Postal Service. The addresses from the response cards should be geocoded and displayed in a GIS environment. Look for trends and identify geographic locations along the pipeline that may need increased emphasis in Public Awareness, or where you need to focus on community relations.

The success of direct mail campaigns are usually measured in dollars returned versus dollars invested. In the case of Public Awareness notification mail campaigns for pipeline safety, a statistical measurement of responses versus the outgoing delivered mail universe is an effective measurement tool to gauge the safety awareness generated by the mail campaign.

Advanced planning for the response measurement is a key to the accuracy of any conclusions generated from the mail campaign. Pipeline Operators should determine who and where they want their response to be measured, and carefully structure each questionnaire to capture the respondent's answers to meet their intended goals.

By knowing how many addressees are in each Stakeholder audience group before the mail is delivered, the campaign management team should be able to set response goals for each audience segment. In short, ask the right questions in order to get the best answers for your response effectiveness measurement for each Stakeholder audience segment.

How much response is enough to make valid effectiveness conclusions? Household response levels of 3% are considered valid, and Business-to-Business response of 5-8% are considered valid in marketing research firm conclusions and product marketing recommendations. Nielsen Television Ratings are concluded from a total of 1640 carefully screened households and overnight tabulations of their viewing habits versus 220+million television sets as Audience Share measurement and 107 million USA households viewing at any given prime-time hour. The Business-to-Business response levels require higher response levels to measure against smaller segmented audiences. Consequently, 3% response to a defined household audience and 5 to 8% response from business groups will validate conclusions of the statistical trends indicated by the survey response.

Tabulations for each Stakeholder audience segment response can be measured geographically by ZIP code, county, state and compared to the outgoing mail universe; and geo-profiled on maps along each pipeline corridor. Sub-response groups to each question can be measured from each Stakeholder group and compared to the aggregate total response to measure variances to the total respondent audience and for individual analysis of each Stakeholder group, i.e., where we are communicating well and where we are weak in certain groups or geography.

These segmented audience measurement sets will indicate the strengths and weaknesses in the mail campaign effectiveness across all the varying Stakeholder groups in the outgoing mail audience. ZIP code tabulations will indicate geographically where response is strong versus other ZIP codes that have a lower rate of response. Each pipeline territory can then be identified as to where more awareness education is indicated and where management needs to concentrate their continued awareness efforts with additional mini-mail campaigns or personal meetings.

Conclusions as to the effectiveness of the mail campaign are indicated by analysis of statistical results of each subset. Each subset group can be segmented during survey response tabulation to fit the instructions given by the pipeline management of the intended measurement goals. Statistical summary reports to management and an Executive Report Summary in written text form will provide management with measured results and actionable directions for continued RP 1162 compliance programs.

## **CONCLUSION**

As you can see, there is a lot involved with putting together a successful Public Awareness Program. We have only been able to briefly touch on key areas for this paper.

In summary, you need to have a strong company policy, starting at the executive level, followed with a good internal education program to make sure all of your employees understand the policy of the Public Awareness program. Appropriate application of GIS spatial analysis is critical in identifying your Stakeholder audiences. We've also stressed the importance of data integration from various information sources. Leveraging this information provides the ability to create metrics to monitor the effectiveness of your program. Hopefully, we have given you a roadmap to answer the question "Is it working?".