



**pennsylvania**

DEPARTMENT OF TRANSPORTATION

# Action Plan for Implementing Local Airport Hazard Zoning Ordinances

Final Report

March 22, 2011

URS Corporation



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION

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## Introduction

The purpose of the project was to facilitate the development of airport hazard zoning ordinances by applicable municipalities to exponentially increase statewide compliance with Pennsylvania's Airport Hazard Zoning Act 164.

A safe and reliable network of public-use airports is essential to the economic stability of this Commonwealth. Unfortunately, a substantial number of PA municipalities located near airports have not utilized land use and zoning ordinances to preserve and protect these transportation resources. Furthermore, many have not complied with Pennsylvania's Airport Hazard Zoning law, Act 164 which requires those municipalities that fall within an airport hazard area to adopt, administer, and enforce airport zoning regulations (ordinances). It is critical that action be taken to reverse the trend at the local level to allow development that is incompatible with airport operations, safety and growth.

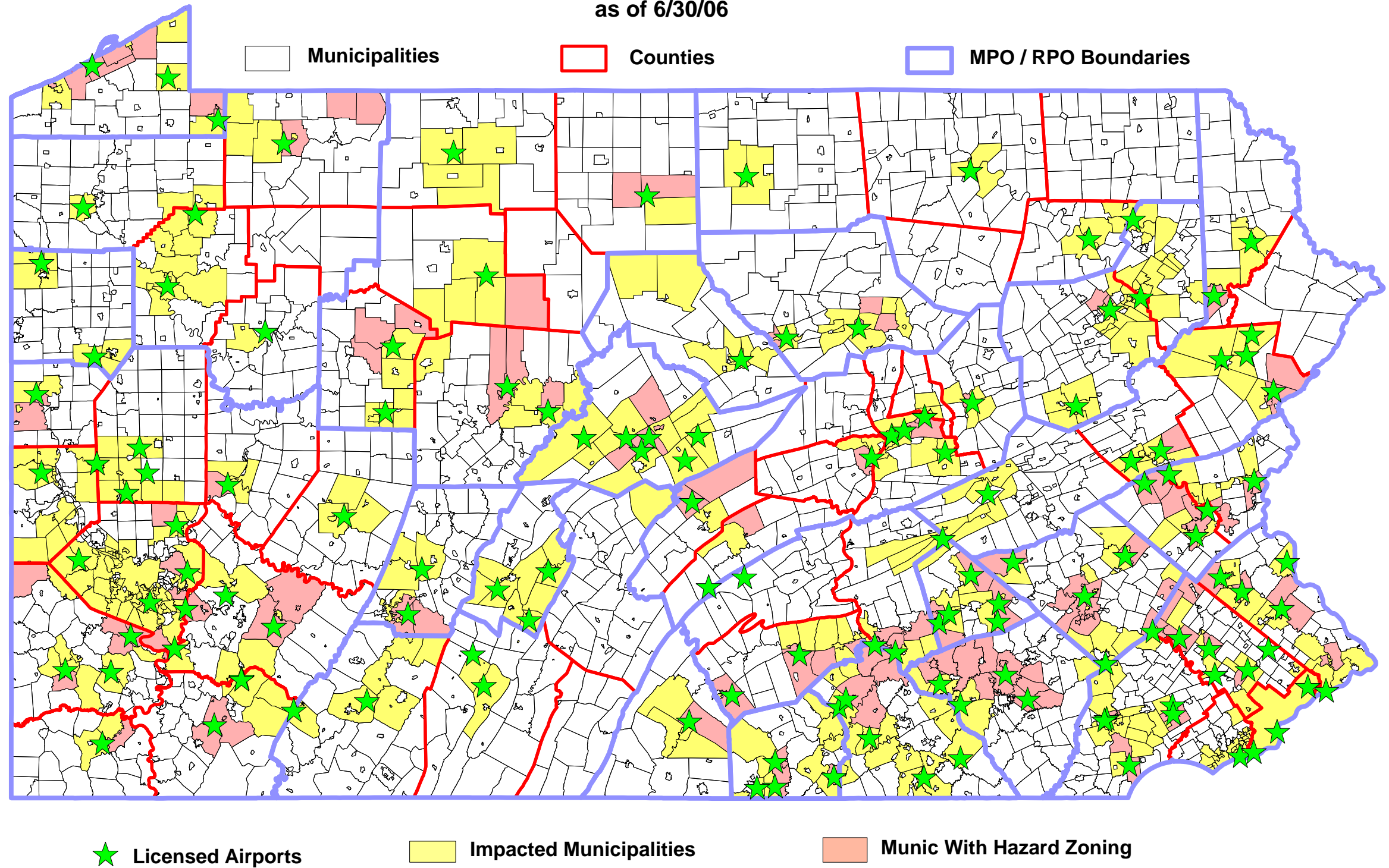
Despite efforts from various state, regional, and local agencies, a majority of municipalities in the Commonwealth that have an airport hazard area within its boundaries have not adopted an Airport Hazard Zoning Ordinance. Based on 2006 data:

- There are 2570 municipalities in Pennsylvania.
- There are 126 public use airports.
- About 680 municipalities are required to enact airport hazard zoning.
- Of the 680 municipalities, only 159 municipalities had hazard zoning in effect (23% compliance rate).

*Figure 1* graphically depicts the above information on the following page.

## Status of Airport Hazard Zoning

as of 6/30/06



*LINARE CONSULTING 10/31/08*

Reasons for noncompliance vary from municipality to municipality. These include but are not limited to:

- Lack of zoning of any type in some areas of the Commonwealth.
- Concern airport zoning would limit potential development in municipalities.
- Limited resources on the local level for enforcement and defense of possible challenges to the ordinance.
- Lack of knowledge and/or enthusiasm of the requirement.

This project was designed to address the problem by development of streamlined ordinance language, facilitation & negotiation models, presentation and educational tools, and a statewide strategy (action plan) for facilitating the establishment of ordinances as defined by Act 164.

The following sections highlight the major areas of focus for this project and the impacts that each area have on the process of establishing an airport hazard zoning ordinance.

## **Task 1: Develop "Best Practices" Model**

The initial project task was to evaluate and incorporate available best practices, data, and resources to minimize startup efforts and maximize municipal outreach efforts. The team capitalized on several prior Bureau of Aviation (BOA) studies that collected municipal compliance information and rationales for noncompliance. Part of the data was utilized by URS to develop a municipal contact database and workshop presentation material. The Bureau also provided web base support, developed a list of Frequently Asked Legal Questions, and drafted a project workshop marketing brochure.



A key component to ensure the effectiveness of the project was to have a thorough idea of the issues concerning airport hazard zoning in the Commonwealth and to obtain / develop data which aid in increasing municipal compliance. This involved the following subtasks:

- A) Research Best Practices
- B) Develop Affected Municipalities Database / Contact List
- C) Prepare Zoning Templates of Part 77 Surfaces
- D) Develop a User-Friendly, Streamlined Model Ordinance
- E) Create Presentation and Education Materials
- F) Identify Potential Funding Options

This information, along with discussions with representatives of the PennDOT Bureau of Aviation, led to the development of a preliminary model on how airport hazard zoning workshops should be prepared and what materials should be developed for them.

A considerable number of project deliverables came out of this task. More specifically, Task 1 evaluation efforts led to the development of a new airport zoning model free of traditional complex aviation concepts; hazard area overlay maps; GIS data layers for use by local government agencies to help identify and track development in hazard areas, and a workshop presentation that outlines the necessary details and process by which zoning ordinances can be developed.

## ***A. Create a Model Action Plan of Best Practices***

A variety of reports, documents and electronic media was reviewed at the project onset. Along with this material, discussions were held with staff of the Bureau of Aviation, various Metropolitan Planning Organizations, municipalities and airports to identify airport zoning issues. Literature research included, but was not limited to, the following materials (additional materials are listed in *Appendix A1*):

### Documents /Reports / Studies

1. Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, March 1993.
2. Pennsylvania Continuing Aviation System Plan: Conduct Airport Hazard Zoning and Land Use Compatibility Study-Statewide, PennDOT Bureau of Aviation, September 2005.
3. Pennsylvania Airport Zoning Act (Act 164).

### Example Ordinances

1. Model Zoning Ordinance to Prevent the Creation or Establishment of Airport Hazard, PennDOT Bureau of Aviation.



## Key findings

A number of issues emerged during the research phase of the project. One of the more specific issues was why there was a lack of compliance with municipalities in adoption of airport hazard zoning. Discussions with various municipal and planning officials, along with municipal survey results documented in the Bureau of Aviation 2005 report, “Pennsylvania Continuing Aviation System Plan: Conduct Airport Hazard Zoning and Land Use Compatibility Study-Statewide” **revealed the following pertaining to noncompliance:**

- Municipalities are not aware of the Airport Zoning Act.
- Municipalities did not know they are within the Part 77 area of their local airport.
- Local zoning enforcement personnel do not understand the Part 77 imaginary surface concept.
- The current model zoning ordinance offered by the FAA and Bureau of Aviation is complicated.
- Liability concerns with having the ordinance.
- Some municipal solicitors are not familiar with the airport hazard ordinance and sometimes advised against adopting it.
- Concerns that the ordinance would entail cost (i.e., “an unfunded mandate”).

From a local government standpoint, the above perceived concerns are understandable. The Commonwealth’s Airport Zoning Act (Act 164) was passed in 1986. Turnover in a typical municipality in Pennsylvania occurs regularly, and new staff may not aware of ordinance requirements not spelled out in the Municipalities Planning Code (MPC). Since Act 164 is in the aviation code it is not referenced in the MPC. Also, the municipality may only be aware of the act if their local airport authority has discussed it with them. With regard to not understanding the Federal Aviation Regulations (FAR) Part 77 imaginary surface concept, to a layperson the regulations and the corresponding model zoning ordinance can be quite overwhelming. Lastly, the final three bulleted issues listed above can be cited as general issues most municipalities deal with pertaining to new ordinances.

The issues cited above were used to build the framework of the Best Practices Model. They guided not only the development of educational material, but shaped how the information would be presented, and who would be the target audience.

## ***B. Develop Affected Municipalities Database /Contact List***

The purpose of developing the Municipal Contact Database was twofold: First, a contact database was needed to identify various municipal elected officials and staff to invite to the workshops. Second, the database needed to identify which municipalities were affected by each public airport's Part 77 surface areas.

The Bureau of Aviation provided existing databases containing public use airports and municipalities known to be affected by the corresponding airport(s). The affected municipal data was verified and updated once the surface areas for each airport were mapped in Geographic Information System (GIS) layers to correspond the surface areas with municipal boundaries.

Once the affected municipalities were updated, a database of contact information (i.e., name, address, phone, and email – when available) for various municipal positions in each municipality was developed. The original municipal contact information was obtained from the Pennsylvania Department of Community and Economic Development (DCED) in August 2010.

Because contact and staff responsibility at any particular municipality can vary greatly, the contact database created contained multiple positions for each entity. In addition, position titles can vary depending on the type of municipality (city, borough or township). A sample of the contacts generally made for workshop invitations included Solicitors, Township Managers, Planning Directors, and Managers. The final, agreed upon master contact list titles are shown in *Appendix A2*.

Along with the municipal contact information, the database identified the municipal name, the county the municipality resides in, and the airport related to the municipality. Up to three airports could relate to a municipality, therefore three separate airport fields were designed into the database.

Later, during the workshop phase of the project, this master database was utilized to identify which municipalities and staff to invite to each of the 21 workshops by geographic location.

## ***C. Prepare Airport Surface Area Maps***

FAR Part 77 surface area mapping for each public airport was developed for the project. The project team felt this was essential for a number of reasons. First, the mapping would indicate the boundaries of the five surface zones for a given airport. Second, municipal boundaries would be included on the mapping to indicate which surrounding municipalities are affected by the hazard zoning.

Third, the mapping could be utilized by municipalities in their ordinance adoption and ordinance administration.

To provide flexibility, each template was originally created using AutoCAD software and then imported into ArcGIS. Airport coordinate information and runway approach types were provided by the Bureau of Aviation from the FAA Form 5010 Airport Master Record Database. End of runway coordinate information was not available for turf runways in the Commonwealth and this information was approximated based upon aerial photography and FAA databases linked to Google Earth.

Background GIS files (municipal and county boundaries, state roadways) were obtained from Pennsylvania Spatial Data Access (PASDA) through Penn State University.

A sample map showing the template that was developed is shown in *Figure 2*. Airport surface area maps for each airport are contained in *Appendix A4*.

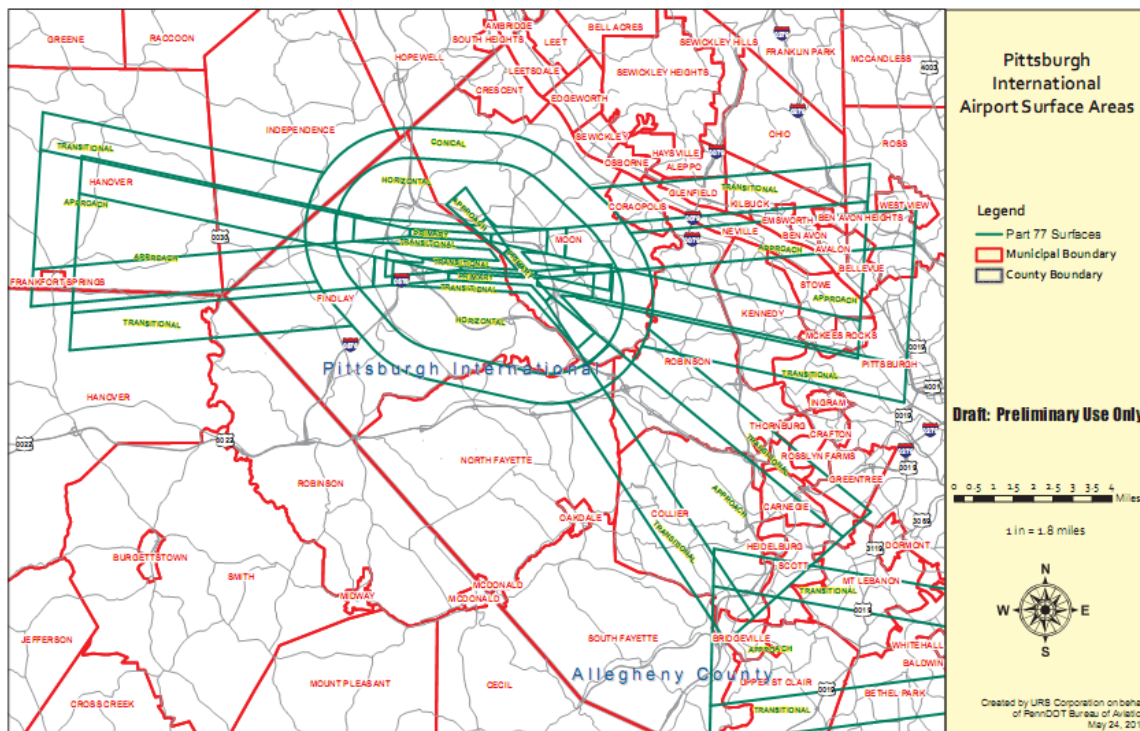


Figure 2: Sample Surface Area Map for Pittsburgh International Airport

**Modification procedures:** The Bureau of Aviation is well-equipped to update airport plans using GIS and CAD when data is updated for local airports. Any changes in runway plans, instrumentation, or other pertinent data should be coordinated with BOA to ensure that the latest information is reflected in PennDOT records. The GIS update procedure is contained in *Appendix A13*.

To assist the Bureau of Aviation in tracking municipal compliance and the overall progress of the airport hazard zoning effort, another GIS database was developed. This zoning status map (*Figure 3 on the following page*) uses a basemap of Pennsylvania with boundaries of each municipality and color-coding to show their zoning status (This map illustrates the zoning status of those municipalities that responded to a non-scientific survey sent out with the final webinar invitation).

The options for display are No Status (for those municipalities either not providing an update to BOA or not in an area affected by an airport), No Ordinance, Developing Ordinance, or Adopted Ordinance. As municipalities provide updated ordinances to BOA, the zoning status map can be updated and time-stamped to keep a current listing of where each municipality stands in the zoning process.

### **Develop a New Airport Overlay Model Ordinance**

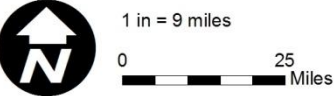
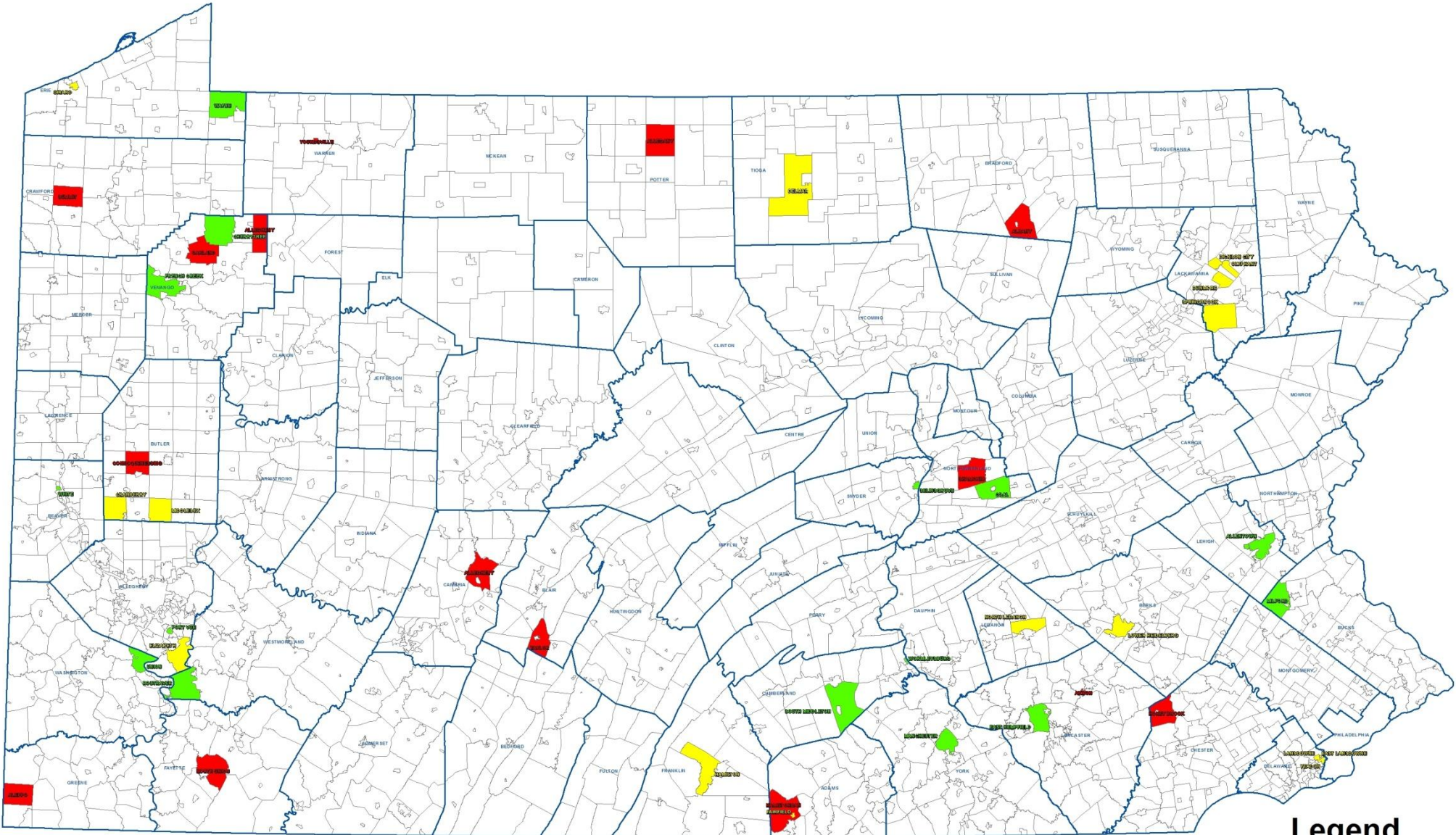
As discussed earlier, several ordinances utilized in Pennsylvania and other areas across the country were reviewed for this project. The current Airport Hazard Zoning Ordinance “model” made available by the Bureau was developed in the late 1980’s based on the FAA Model Ordinance guidance. It is both detailed and complex making it difficult for local zoning officials use. This was a primary reason an evaluation of ordinance options was conducted. The goal was to simplify and streamline the model for use by municipalities and focus their review on an evaluation of the height of objects to ensure they do not interfere with the “airspace” around an airport.

Based on this review it was determined that the best type of ordinance was an “overlay” ordinance. Overlay ordinances consist of regulations that address a specific requirement without impacting the underlying ordinance. In other words, they are applied in addition to regulations in the base zone and do not modify the regulations of the base zone. This was critical to the project as municipalities have resisted compliance with Act 164 for fear of the cost and controversy of making a change to their existing ordinances. By establishing that the airport hazard zoning ordinance is an overlay ordinance that would not change the base zoning of the municipality, it was believed the municipalities may have less apprehension in adopting it.



# Airport Hazard Zoning Ordinance

## Status of Adoption



### Ordinance Status

Ordinance Status	No Ordinance
Municipality	
CONNOQUENESSING	2TWP
HAMILTONBAN	2TWP
HONEY BROOK	2TWP
NORTH UNION	2TWP
OAKLAND	2TWP
SHAMOKEN	2TWP
SUMMIT	2TWP
TAYLOR	2TWP
YOUNGVILLE	BORO
Ordinance Status	Ordinance Already Adopted
Municipality	
ALLENTOWN	CITY
CHERRYTREE	2TWP
COAL	1TWP
EAST HEMPHIELD	2TWP
FRENCH CREEK	2TWP
MANCHESTER	2TWP
MILFORD	2TWP
PORT VUE	BORO
ROSTRAVER	1TWP
SELINGROVE	BORO
SOUTH MIDDLETON	2TWP
UNION	2TWP
VALTINE	2TWP
WHITE	2TWP
WORMLEYSBURG	BORO
Ordinance Status	Ordinance in Progress
Municipality	
CRANBERRY	2TWP
DELMAR	2TWP
DICKSON CITY	BORO
DUNMORE	BORO
EAST LANSOWNE	BORO
ELIZABETH	1TWP
FAIRFIELD	BORO
GIRARD	BORO
HAMILTON	2TWP
LANSOWNE	BORO
LOWER HEIDELBERG	2TWP
MIDDLESEX	2TWP
NORTH LEBANON	2TWP
OLYPHANT	BORO
SPRINGBROOK	2TWP
YEADON	BORO

### Ordinance Summary

Municipality Count	Ordinance Status
9	No Ordinance
16	Ordinance in Progress
15	Ordinance Adopted

### Legend

-  County
-  No Ordinance
-  Developing Ordinance
-  Adopted Ordinance
-  No Update

A draft model overlay ordinance was developed and reviewed by the PennDOT Chief Counsel's office to verify the language was sufficient to comply with Act 164. This model overlay ordinance included all provisions required by Act 164 but minimized the technical details of FAA Part 77 regulations to keep it concise and easy to interpret (both code sections are contained in *Appendix A5*). In fact, this model relies on aviation experts – Bureau of Aviation and FAA – to determine if the proposal will have an impact on the Part 77 that must be protected. The municipality can then use this determination to make permit decisions without being airspace/airport experts. This is a major shift from previous models. It is one that is projected to improve compliance while easing administrative burdens.

The new Airport District Overlay Ordinance (see *Appendix A7*) was a major focus of the statewide workshop presentations. It, along with the other presentation documents, is available for download from the BOA website.

#### ***D. Create Presentation and Education Materials***

Based upon the research and discussions with Bureau of Aviation staff and local government officials, four key goals were developed to frame the presentation and educational materials. These goals were:

1. Develop and provide updated tools that directly address the issues identified as reasons for noncompliance with airport hazard zoning.
2. Develop electronic airport hazard area maps to confirm and convey how municipalities are impacted.
3. Develop and provide workshop materials that convey aviation information in a way that municipalities are able to understand and easily utilize during the development and administration of the airport hazard zoning ordinance.
4. Develop presentation and materials so that they are available electronically during and after on-site workshops.

#### **Pre-Workshop Brochure and Discussions**

Early in the workshop formulation phase, it became apparent that we needed several tools to publicize the workshops. The 2-sided brochure shown in *Figure 4* below was developed for this purpose. It was useful in telling the reader about airport hazard zoning and what the workshops would cover; it was also a way to tell them how to get more information and register for the workshop.

Discussions prior to the workshops were also held with the Pennsylvania Aviation Advisory Committee, the Pennsylvania State Association of Township

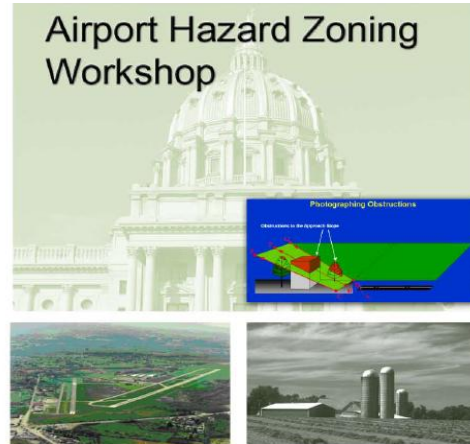


Supervisors (PSATS) and the Pennsylvania State Association of Boroughs (PSAB). These discussions were held to determine what the members and staff of these organizations felt were the topics and material needed for municipalities to embrace implementation of airport hazard zoning ordinances.

More About Pennsylvania Act 164 of 1984

According to Pennsylvania Act 164, municipalities within the Federal Aviation Administration (FAA) Federal Regulation 14 CFR Part 77 (i.e., "Part 77") areas around an airport are required to have ordinances that restrict the height of objects that could interfere with airport operations. The law outlines the power to adopt the zoning regulations as well as the zoning requirements and administrative processes. The general rule of the law is the following (1984 Pa. Laws 164 codified at 74 Pa. Cons. Stat. §§5912):

"In order to prevent the creation or establishment of airport hazards, every municipality having an airport hazard area within its territorial limits shall adopt, administer and enforce, under the police power and in the manner and upon the conditions prescribed in this subchapter and in applicable zoning law unless clearly inconsistent with this subchapter, airport zoning regulations for such airport hazard area. The regulations may divide the area into zones and, within the zones, specify the land uses permitted and regulate and restrict the height to which structures may be erected or objects of natural growth may be allowed to grow. A municipality which includes an airport hazard area created by the location of a public airport is required to adopt, administer and enforce zoning ordinances pursuant to this subchapter if the existing comprehensive zoning ordinance for the municipality does not provide for the land uses permitted and regulate and restrict the height to which structures may be erected or objects of natural growth may be allowed to grow in an airport hazard area."



An opportunity to partner on Act 164 of 1984

#### Airport Zoning Hazard Workshop

These workshops will be held statewide during 2010 to facilitate the development of airport hazard zoning ordinances by hazard area impacted municipalities.

The goal is to encourage a collaborative and partnered effort in the development and administration of zoning ordinances for Pennsylvania public use airports. The workshop has been designed to review enabling legislation, present an overlay district ordinance option, provide resources such as airport maps and discuss technical assistance and funding opportunities.

While zoning is the responsibility of municipalities, county and metropolitan/rural planning organizations, as well as airports, have a role to play. All are interested in preserving vital transportation resources as efficiently as possible and zoning is the key!

#### Workshop Outline

- Review requirements of PA Airport Zoning Act & Part 77.
- Explain the Part 77 Imaginary Surface concepts and identify surfaces in each region.
- Provide guidance on the development of ordinances.
- Discuss administration and enforcement responsibilities of airport zoning.
- Review funding and technical assistance opportunities.
- Begin discussion of cooperatively enacting ordinances locally.

#### Who Should Attend ?

Planning commission members, zoning board members, elected and appointed officials, municipal solicitors, and planners involved in zoning for their municipality. Airport sponsors, county planners, & MPO/RPO planners involved in airport planning should also attend.

#### Workshop Schedule

Workshops are approximately two hours in length. One to two workshops per MPO/RPO will be conducted. Each will include several airports and those municipalities and counties they impact. Please visit the Bureau of Aviation website at <http://www.dot.state.pa.us/Internet/Bureaus/pdBOA.nsf/AviationHomepage?openframe> to find the workshop coming to your community soon!

#### Instructors

Consultants from URS Corporation will walk participants through workshop material and resources.

The team members include:

- Keith Johnson
- Ann Ogoreuc
- Marian Hull
- Ken Brazeau
- Chet Parsons
- Matt Ponce

#### Registration Information

There is no registration fee for this workshop, but space is limited. At least one week in advance, please register online at: <http://www.dot.state.pa.us/Internet/Bureaus/pdBOA.nsf/AviationHomepage?openframe>

You may also complete this form and return it to URS Corp. Please be sure to indicate which workshop you plan to attend.

URS Corporation  
Attn: Jan Chess  
501 Holiday Drive  
Pittsburgh, PA 15220  
Fax: (412) 503-4702

Name: \_\_\_\_\_

Agency: \_\_\_\_\_

Email Address: \_\_\_\_\_

Tel Number: \_\_\_\_\_

Workshop Location/Date: \_\_\_\_\_

To verify or cancel your registration or for more information, please contact Jan Chess at (412) 503-4584.

Figure 4: Brochure to advertise Airport Hazard Zoning Workshops



## **Workshop Invitees**

The main audience targeted for the workshops was municipal planning staff and municipal solicitors. This was decided based upon previous research, discussions with various organizations and the fact that municipalities are the core responsible party for enacting and administering ordinances in the Commonwealth. The municipal solicitors, who are usually separate entities contracted by the municipalities, were also considered a target audience because municipalities looked to solicitors to advise them on new ordinances.

Along with municipal representatives, the following groups were also included in workshop invitations:

- Airport managers
- County planning staff
- Metropolitan and Rural Planning Organization staff

Invitation letters along with email invitations were sent to all the affected parties who were geographically located around each workshop training site. Invitations were sent out approximately 3-4 weeks prior to each training session with reminder emails sent out one week prior to the training date.

## **Workshop Design**

The design of the workshop centered on the format of the presentation, how the material should be presented, where and how many workshops should be held, and how long the workshops should be.

There would usually be two instructors which would split the training time. Sign in sheets, indicating the person and the agency they represent would be collected, along with evaluation forms at the end of the workshop.

The number and locations of the workshops were planned by first determining which airports to include in a workshop. This was important as the airport overlay development was directly tied to the time and composition of each workshop. Only the overlays for the targeted airports and their municipalities were included in the workshop binders. The number of workshops needed was determined after airports were grouped and the anticipated number of participants considered. Ultimately 21 onsite and one web based workshops were scheduled.

It was also decided that the total workshop duration should not be more than two hours. This time limit was chosen to accommodate attendees' schedules and to

make the workshops more appealing. They would be scheduled for either late morning or early afternoon to accommodate attendees' schedules for traveling.

The theme of the workshop presentation would be to address concerns municipalities had with the airport hazard zoning ordinance. The following were the educational goals of the workshop:

- ***Increase Awareness and Understanding of Airport Hazard Zoning and PA Act 164***
- ***Explain the Part 77 Surface Concept***
- ***Identify the Part 77 Surface Areas in your Region***
- ***Discuss the Airport District Overlay Ordinance Components***
- ***Discuss Administration and Enforcement Areas of the Ordinance***
- ***Discuss Liability Concerns***
- ***Discuss Availability of Assistance for Adoption and Administration of Ordinance***

The workshop presentation included a PowerPoint presentation, a video explaining the surface area concept and multiple points to answer questions and concerns.

### **Workshop Materials**

Along with the PowerPoint presentation, a workbook was assembled for each participant with a number of educational materials that were developed for the project. These materials were also provided in digital format and placed on the Bureau of Aviation's website. This included the following:

- *Workshop Presentation*
- *Example Surface Area Maps*
- *Pennsylvania Airport Hazard Zoning Act (Act 164)*
- *PA Act 164 Frequently Asked Questions*
- *Federal Aviation Regulations Part 77*
- *Airport District Overlay Model Ordinance*
  - *Notice of Construction or Alteration Forms (PennDOT AV-57 and FAA Form 7460-1)*
- *Flowchart on Procedures*

- *Part 77 Surface Areas Defined*
- *Roles / Responsibilities*
- *Contact Information*
- *List of Workshops*
- *Workshop Evaluation Form*

### ***E. Develop Joint Funding Options***

To aid municipalities in enacting and administering airport hazard zoning ordinances, three funding options were presented to them at the workshops. The first funding option is currently available to municipalities for land use and zoning. The second and third funding options are available to airports for safety and improvement projects. Traditionally, airports have had access to Airport Development Program (ADP) funding for obstruction removal projects. However, the Bureau of Aviation has committed to make funds available to airports to assist them in getting airport hazard zoning ordinances in place as part of this project. The funding options presented at the workshop were:

1. DCED LUPTAP Grants

This is a traditional municipal funding available from the Department of Community and Economic Development's Land Use Planning and Technical Assistance Program (LUPTAP).

2. Airport Development Program Grants – Traditional use

This funding is available to airports for Part 77 obstruction mitigation

3. Airport Development Program Grants- Zoning Implementation

Limited access to funding via airports for Airport Hazard Zoning Ordinances has been made available as part of this project.

## **Task 2: Test Site Evaluations**

The Best Practices Model incorporates all of the tools developed for the Airport Hazard Zoning Workshops. They include but are not limited to the new model ordinance, overlay maps, and an overview of Act 164 requirements organized in a two hour presentation. In this task, the model was evaluated by delivering it as "dry run" workshops for two stakeholder groups. The first group was mostly Bureau of Aviation staff but a representative from Delaware Valley Regional Plannin Commission (DVRPC) and Pennsylvania State Association of Township Supervisors (PSATS) also participated. Feedback from this dry run was incorporated prior to conducting the next dry run with municipal representatives in York County. These test runs provided valuable information on whether the materials developed in Task 1 effectively provide the municipalities with information and methods required to draft and enforce the airport hazard zoning ordinances. After each run, the workshop evaluation forms, along with the interactive discussions during the workshop, were evaluated to determine the finalized workshop model.

### ***A. Bureau of Aviation Test Workshop***

The first test workshop was held October 14, 2009, at the PennDOT Riverfront Office Complex. As stated previously, the majority of workshop participants were mainly Bureau of Aviation staff. Although these staff members had aviation backgrounds, a number of the participants did not have a background in airport hazard zoning or municipal planning experience. Approximately 25 people attended this test run.

The test workshop was approximately 3 hours long with a break for lunch. Although the goal was to conduct the workshop in 2 hours, the additional time afforded time to evaluate different presentation ideas and interact with the participants to fine tune the materials.

### ***B. York County Test Workshop***

The second test workshop was held December 10, 2009, at the offices of Stewart and Tate Inc.in York, PA. Unlike the first test workshop, this test workshop included target group representation. Municipal zoning administrators, municipal solicitors, planning consultants, airport managers, county planning staff and metropolitan planning organization staff from York County were invited. (Note: only municipalities affected by airport hazard zoning were invited. Approximately 15 people attended this test run).

### ***C. Modify Best Practices Model***

Based upon the feedback received at the two test runs, modifications to the Best Practices Model were made. For the most part, the feedback was very positive at the workshops. Below are the changes / suggestions made at the test workshops:

- Mention and provide a brief description of the Airport Zoning Act earlier in presentation.
- Try not to present Part 77 in too much detail.
- Mention that municipalities are required to enact, administer, and enforce airport zoning ordinances. This requirement has been substantiated through court cases.
- Mention that existing surface area penetrations are grandfathered. If an ordinance is in place, obstructions can be prevented.
- The ordinance includes the footprint of the hazard area. FAA and PennDOT will determine if proposal will penetrate surface zone.
- Emphasize that the FAA and PennDOT Forms identify obstructions and the municipalities will not have to determine obstructions on their own.
- Show a 3D representation of the surface areas early in the presentation.
- The 20 minute Aircraft Owners and Pilots Association (AOPA) video was informative on the importance of airports, but was too long for the workshop.
- Put a separate section in the workshop binder for surface area definitions and keep this part simple in the presentation.
- Provide a Frequently Asked Questions (FAQ) section on legal issues that the PennDOT Chief Council can verify.
- Note - Rarely do municipalities participate in joint municipal zoning.
- Need to emphasize this workshop and its materials are a terrific resource and that municipalities will not need to enact a complex ordinance

As a result of the feedback some changes were made to the presentation. PennDOT identified specific questions that the municipalities have asked over the years and/or may be concerned about. They also conducted a Web-based survey to solicit Act 164-specific questions from municipal solicitors. These questions were then reviewed by PennDOT chief counsel who provided sound legal responses to each question.

The model ordinance was also modified. Major modifications included Section 5 and 6 dealing with the administration of the ordinance in relation to applications and variances. The modification change mostly dealt with applications going

through PennDOT to verify if obstructions were taking place. The previous model ordinance had applicants going through both PennDOT and the Federal Aviation Administration.

#### ***D. Recommendations for the MPC***

A key component to ensure the effectiveness of airport hazard zoning is to develop a link between the requirements of Act 164 of 1984 and the Municipal Planning Code (MPC), Act 247 of 1968. This is an important link because local government agencies use the MPC on a daily basis to govern how they operate their planning and zoning offices. The MPC is an essential tool for planners in Pennsylvania, and being able to link this code with the airport hazard zoning requirements will be very helpful in maintaining municipal awareness of the requirement to establishing airport hazard ordinances in municipalities across the Commonwealth.

The following options have been identified as possible approaches for PennDOT to pursue to link the MPC with the requirements of Act 164.

##### **Option 1**

Utilize Act 24 of 2008, the Appalachian Trail Protection Act, as a model to develop a new section of the MPC dedicated to the requirements of Act 164 and how those requirements fall under those planning and zoning standards of the MPC. As part of this option, a procedure should be developed that includes a framework for municipalities to share adopted ordinances with PennDOT for reference and evaluation.

Through the General Assembly, identify champions that can support the legislation as it moves through committees for review and amendment. Work closely with the PennDOT Aviation Advisory Committee to shepherd the legislation through the amendment process.

The perceived strength of this option at the conclusion of the workshops was that it would be a direct connection between the MPC and Act 164. Since that time, the Bureau has noticed that this direct connection may be unnecessary due to the high level of municipal participation directly resulting from the workshop outreach.

One possible risk of this option is that the General Assembly could recommend unfavorable changes to Act 164 during their review of the request to add a new section to the MPC. Another risk is that there would be no support to introduce a change to the MPC since airport zoning is already covered.

##### **Option 2**

Rather than draft new language to describe the airport hazard zoning process in the MPC, only include a reference to Act 164 for guidance on developing an airport hazard zoning ordinance or overlay. The addition of a reference would not require changes to the MPC every time Act 164 is amended but would still provide a direct link to the Act.

Through the General Assembly, identify champions that can support the legislation as it moves through committees for review and amendment. Work closely with the PennDOT Aviation Advisory Committee to shepherd the legislation through the amendment process.

Once again, a possible risk of this option is that the General Assembly could recommend unfavorable changes to Act 164 during their review of the request to add a reference to the MPC.

### **Option 3**

Do not attempt to make any changes to the MPC for Act 164 requirements. Rather, utilize existing MPC guidance documents to make reference to Act 164 and the additional planning steps necessary to address airport hazard zoning.

No action would be necessary involving the General Assembly and there would be a reduced risk of any changes being introduced to Act 164.

### ***E. Action Plan***

It is very important to maintain momentum and keep Pennsylvania's municipalities moving towards adoption of airport hazard zoning ordinances. The following action items are recommended to the Bureau of Aviation to provide useful resources that will help local government remain focused on ordinance development.

- Follow-up with municipalities to offer assistance, and encourage compliance.
- Collect and track ordinances as they are adopted.
- Ensure airport zoning project information and materials are readily available on the BOA website.



## **Task 3: Implement “Best Practices” Models**

### ***A. On-site Workshops***

#### **1. Format**

Between May and October 2010 airport hazard zoning workshops were held at 21 locations across the Commonwealth. Workshop locations were selected to ensure targeted participants could be accommodated and that the site was convenient.

The workshop was divided into two halves with a break between. The first half focused on presenting the requirements, legal impacts and ramifications of Act 164 and airport hazard zoning within the Commonwealth. The purpose was to help participants understand the connection between Pennsylvania law which mandates airspace protection through zoning and Federal Aviation Regulation Part 77 which defines the airspace areas that must be protected.

The second half of the workshop outlined model ordinance options for implementing airport zoning. The review efforts focused on new “airport zoning district overlay model” and how it could be utilized as a layer on existing zoning or stand on its own. This section also explained how the model’s permit review process capitalizes on airspace review processes by the BOA and FAA.

The materials presented during each workshop to each municipality include:

- The PowerPoint Presentation used in the workshop
- Surface Area Maps for each locally impacted airport and associated jurisdictions
- Pennsylvania Act 164 and FAA Part 77 Code language
- The Airport Hazard Zoning Model Overlay Ordinance developed for the workshops
- Notice of Construction or Alteration Forms from both PennDOT and FAA
- Model Development Review Checklist
- Workshop evaluations summary

## **2. Attendee Contact**

Attendees were contacted about the workshops using a number of methods. A master listing of all affected airports and communities was maintained and updated by URS. Using these contacts, notification letters were sent out to each stakeholder community notifying them of the upcoming workshops and how to register. In addition a brochure was developed outlining the workshops and was distributed along with the letters to share with other local offices and agencies. The third outreach method was digital, with notices for meetings distributed via email and through the PennDOT Bureau of Aviation, DCED, and PSATS websites as well as workshop materials and brochures for upcoming opportunities. Samples of the BOA letter and municipal notification letter are contained in *Appendix A8*.

As the workshops progressed, URS noted attendance and updated the master spreadsheet to track the success rate of the outreach program. The final attendance information was helpful when publicizing our wrap-up webinar, an online version of the local workshop intended to provide the same information for those individuals that were not able to attend an onsite workshop in person.

## **3. Legal and APA Credits**

Continuing education credits for the workshop were established to make participation more attractive to planning and legal professionals. Credits were made available from the American Institute of Certified Planners for Certification Maintenance. Continuing Legal Education (CLE) credits were also made available for the two-hour workshop through Pennsylvania CLE (PACLE).

## **4. Attendance**

This series of workshops was well-attended by a broad range of municipal, county, and regional representatives. A total of 549 people attended the airport hazard zoning workshops including 247 municipal representatives. Data on each workshop is included in the tables below. More detailed attendance information is contained in *Appendix A11*.

Table 1: Airport Hazard Zoning Workshop Attendance

Workshop	Date	Municipalities in attendance	Attendees
Latrobe	5/4/2010	Elizabeth Twp, Latrobe Boro, Middlecreek Twp, Mt Pleasant Twp, Murrysburg Boro, Scottdale Boro, White Oak Boro, White Twp	12
Southern Allegheny	5/14/2010	Buffalo Twp, Hopewell Twp, North Bethlehem Twp, North Fayette Twp, Rosslyn Farms Boro, South Franklin Twp, West Mifflin Boro	23
Johnstown	5/19/2010	Adams Twp, Conemaugh Twp, East Taylor Twp, Ogle Twp, Stonycreek Twp	11
Oil City	5/25/2010	Franklin City, Greene Twp, Sandycreek Twp	13
Lancaster	6/4/2010	Columbia Boro, East Donegal Twp, East Hempfield Twp, East Lampeter Twp, East Petersburg Boro, Hellam Twp, Leacock Twp, Lititz Boro, Lower Windsor Twp, Manheim Twp, Manor Twp, Rapho Twp, Warwick Twp, West Hempfield Twp	24
Hollidaysburg	6/8/2010	Allegheny Twp, Blair Twp, Freedom Twp, Juniata Twp, North Woodbury Twp, Woodbury Boro, Woodbury Twp	15
Ridgway	6/15/2010	Boggs Twp, Bradford Twp, Brockway Boro, Clearfield Boro, Lafayette Twp, Lawrence Twp, Sandy Twp, St Marys City	24

Table 1 Cont'd: Airport Hazard Zoning Workshop Attendance

Workshop	Date	Municipalities in attendance	Attendees
York	6/22/2010	Conewago Twp, East Pennsboro Twp, Fairview Twp, Goldsboro Boro, Harrisburg City, Highspire Boro, Lemoyne Boro, Lower Allen Twp, Lower Swatara Twp, Manchester Twp, Middletown Boro, North Hopewell Twp, Royalton Boro, Shrewsbury Boro, Shrewsbury Twp, Swatara Twp, Warrington Twp, Wormleysburg Boro	37
Gettysburg	6/22/2010	Conewago Twp, Cumberland Twp, Greene Twp, Hamilton Twp, Hanover Boro, Liberty Twp, Mcsherrystown Boro, North Middleton Twp, South Middleton Twp, Union Twp	16
Cranberry	6/29/2010	Callery Boro, Cranberry Boro, Forward Twp, Franklin Twp, Lancaster Twp, Marion Twp, Middlesex Twp, New Sewickley Twp, Penn Twp, South Beaver Twp, Union Twp, West Homestead Boro	34
State College	7/13/2010	Benner Twp, Brown Twp, College Twp, Ferguson Twp, Patton Twp, Potter Twp, Spring Twp, State College Boro, Walker Twp	21
Selinsgrove	7/14/2010	Bloomsburg Town, Coal Twp, Danville Boro, Lower Augusta Twp, Mahoning Twp, Monroe Twp, Penn Twp, Sunbury City, Union Twp, Upper Augusta Twp	23
Williamsport	8/4/2010	Armstrong Twp, Clinton Twp, Hughsville Boro, Loyalsock Twp, Montoursville Boro, Muncy Twp, South Williamsport Boro, Williamsport City, Wolf Twp	21
Wilkes Barre Scranton	8/10/2010	Abington Twp, Bear Creek Twp, Dickson City Boro, Dunmore Boro, Exeter Twp, Hazle Twp, Hazleton City, Nicholson Twp, Olyhant Boro, Ransom Twp, Scranton City, Spring Brook Twp, Throop Boro, Wilkes Barre City	32
Bethlehem	8/11/2010	Allen Twp, Allentown City, Bethlehem City, East Allen Twp, Franklin Twp, Hanover Twp, Heidelberg Twp, Lehigh Twp, Lower Macungie Twp, Lower Towamensing Twp, Mahoning Twp, North Catasauqua Boro, North Whitehall Twp, Northampton Boro, Salisbury Twp, Upper Milford Twp	22

Table 1 Cont'd: Airport Hazard Zoning Workshop Attendance

Workshop	Date	Municipalities in attendance	Attendees
Towanda	8/14/2010	Monroe Twp, Towanda Twp, Tunkhannock Twp	16
Edinboro	8/17/2010	Corry City, Girard Twp, Hayfield Twp, Meadville City, Millcreek Twp, Union Twp, Vernon Twp, Wayne Twp, Wesleyville Boro, West Mead Twp,	19
King of Prussia	8/26/2010	Avondale Boro, Brookhaven Boro, Caln Twp, Chester City, Darby Boro, East Bradford Twp, East Fallowfield Twp, East Goshen Twp, East Landsdowne Boro, Eddystone Boro, Folcroft Boro, Haverford Twp, Limerick Twp, London Grove Twp, Lower Merion Twp, Lower Pottsgrove Twp, Lower Providence Twp, Marcus Hook Boro, New Garden Twp, New Hanover Twp, Newlin Twp, Norwood Boro, Perkiomen Twp, Plymouth Twp, Prospect Park Boro, Ridley Park Boro, Ridley Twp, Sadsbury Twp, Skippack Twp, South Coatesville Boro, Upper Chichester Twp, Upper Darby Twp, Valley Twp, West Bradford Twp, West Brandywine Twp, West Chester Boro, West Goshen Twp, West Nantmeal Twp, West Whiteland Twp, Whitpain Twp, Yeadon Boro	53
Reading	9/21/2010	Bern Twp, Bernville Boro, Bethel Twp, Brecknock Twp, Centre Twp, Cumru Twp, Derry Twp, Jackson Twp, Jefferson Twp, Lebanon County, Lower Heidelberg Twp, Mohnton Boro, Muhlenberg Twp, North Heidelberg Twp, Penn Twp, Reading City, Robeson Twp, Rush Twp, Spring Twp, Tulpehocken Twp, Upper Bern Twp, Upper Tulpehocken Twp, West Reading Boro, Wyomissing Boro	40
Perkasie	9/30/2010	Bally Boro, Buckingham Twp, Doylestown Boro, East Rockhill Twp, Lower Moreland Twp, Northampton Twp, Penndel Boro, Perkasie Boro, West Rockhill Twp,	27
Stroudsburg	10/12/2010	Barrett Twp, Coolbaugh Twp, East Stroudsburg Boro, Middle Smithfield Twp, Mount Pocono Boro, Paradise Boro, Paupack Twp, Pocono Twp, Smithfield Twp, Stroud Twp	21

## 5. Evaluations

Each workshop attendee was encouraged to complete an evaluation of their experience to help the BOA and URS improve the workshop for future presentations.

Evaluation forms queried workshop attendees on the logistics of the training session, the presenters' abilities to communicate the information, the workshop manual's clarity and usefulness, and more specific questions on the topic of airport hazard zoning.

A key finding from a review these evaluations was that there seemed to be a relatively even split between attendees who were aware of Act 164's airport hazard ordinance requirements and those that had no idea it existed.

When asked about any issues that were not covered in the workshop, most replied that they had seen all they needed. A large number of attendees mentioned that they would like to know more about enforcement and how to actually go about putting the tools in place. Many municipalities noted that they would like to hear from those that already have airport hazard zoning in place and their experience in maintaining the ordinance.

A workshop evaluations summary sample is contained in *Appendix A12*.

### ***B. Materials for BOA Website***

The Bureau of Aviation developed a website link dedicated to providing information, resources, and workshop materials for the Airport Hazard Zoning Project.

In fact, the Bureau established a series of electronic surveys to collect workshop registration information and established a link between the workshop schedule on their site and the registration (survey) portal. Specific workshop and logistics information housed here was prepared in collaboration by URS and the Bureau of Aviation. In addition to the workshop schedule, other available information included the brochure developed to publicize the workshop series and a status report listing the affected municipalities by airport and whether Act 164 compliant zoning ordinances have been enacted.

In addition to the above information, the website contains links to each section from the workshop presentation.

### ***C. On-line Webinar***

With the intent to reach those interested in a workshop but unable to attend any of the regularly scheduled sessions, URS and the Bureau of Aviation developed a webinar to present workshop materials one final time.

In addition to announcing this final workshop, the team attempted to get municipalities, regardless of their desire to participate in the webinar, to report back on whether they had adopted airport zoning or were planning to in the future. The results of the feedback through this solicitation effort were mapped by URS and appear in *Figure 3* under Task 1.C.

At the request of the Bureau of Aviation, URS used the webinar platform to conduct and record the workshop for use in the future. This recorded webinar will be available on DVD for reproduction and distribution upon request.



## GIS data

### ***Airport Templates***

The airport hazard zoning workshops held across Pennsylvania in the summer and fall of 2010 were an opportunity to share GIS planning tools with local planning departments and elected officials. As part of the workshop preparations, individual maps were developed using ArcGIS software to display the Part 77 surfaces for each airport across the Commonwealth.

The data used to develop the maps was mostly free data available for public use from Pennsylvania State agencies or other groups. Most of this data is available for download from Pennsylvania Spatial Data Access (PASDA) through Penn State University.

The root data for these maps consisted of airport runway coordinates provided to the Bureau of Aviation by each airport and the FAA surface areas associated with the airport type and associated instrumentation.

A sample map showing the template that was developed is shown in *Figure 5* on the following page.

To assist the Bureau of Aviation in tracking the progress of the airport hazard zoning effort, another GIS database was developed using municipal boundaries from PASDA as the basemap. The intent of this map document is to display the status of each municipalities zoning effort following their workshop.



Figure 5: Pocono Mountains Muni Part 77 Surfaces

## ***Modification procedures***

The Bureau of Aviation is well-equipped to update airport plans using GIS and CAD when data is updated for local airports. Any changes in runway plans, instrumentation, or other pertinent data should be coordinated with BOA to ensure that the latest information is reflected in PennDOT records.

The GIS update procedure is contained in *Appendix A13*.

## **Appendices**