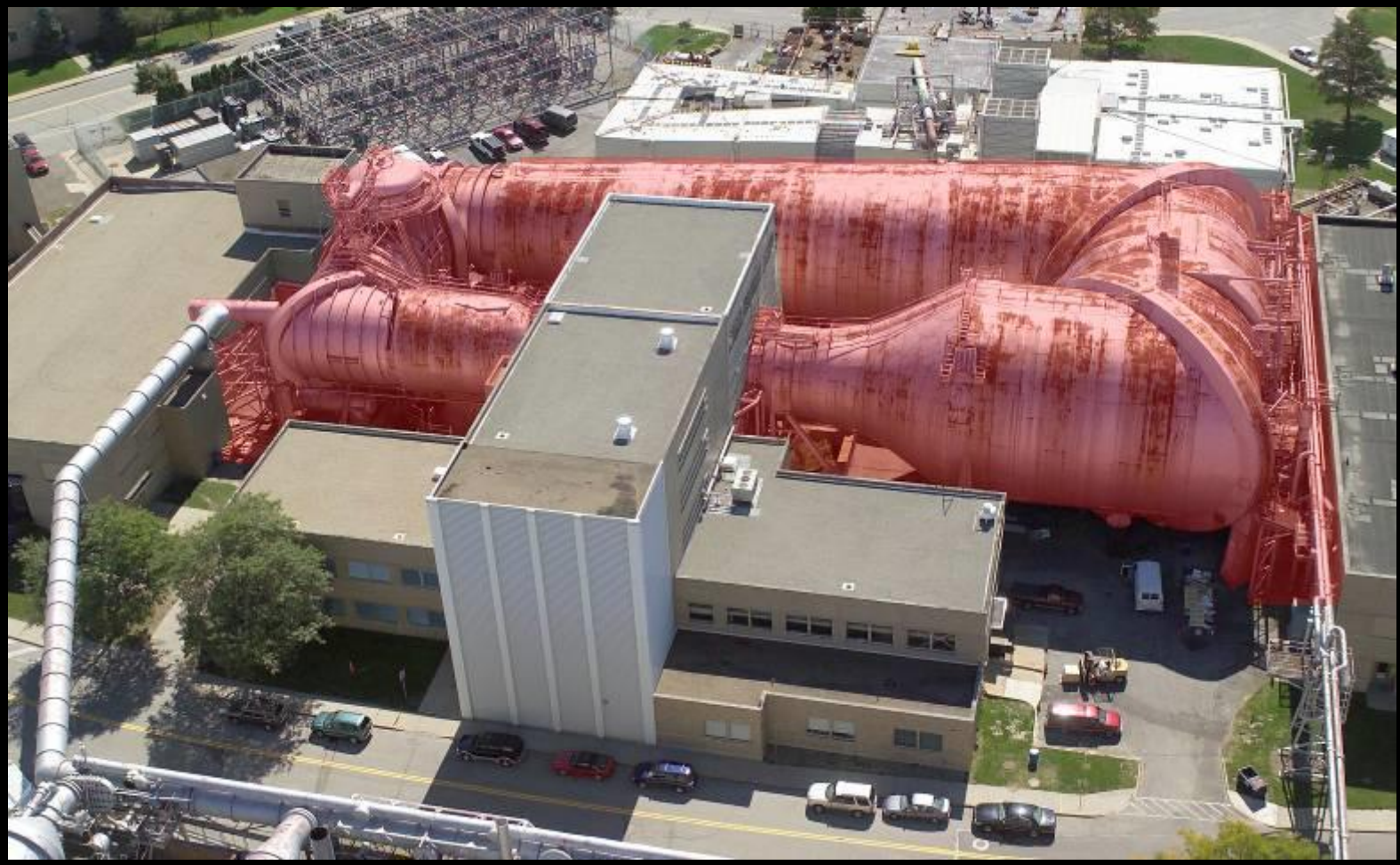
PSL and AWT

DEMOLITION

Les Main



AWT

AWT Justification

NASA Headquarters has concurred with and advocated the proposed demolition of AWT. The facility, as configured, has been out of service for more than 30 years. The tunnel underwent major modifications to support specific test goals for the Centaur Program. No significant research work has been done in the tunnel circuit since the end of the Centaur Program.

The Government completed a preliminary engineering study in the mid-1980's to substantially modify the AWT circuit for use as a new Icing Research Tunnel Facility. NASA Headquarters rejected the proposal based on cost.

There are no current proposals for either near-term or long-term use of the tunnel circuit other than as a potential Visitor's Center Tour stop. Although the AWT is unique based on its sheer size alone, the maintenance costs for the facility are now so high as to be justified only by the largest of research programs. A recently completed cost estimate to do minor exterior repairs and repaint the tunnel circuit and utilities was in excess of $4.0M. There has been no recent interest from DOD, other government agencies, or private companies to use any significant portion of the AWT circuit. The current NASA GRC proposal is to remove the entire AWT circuit except for the Test Section within the High Bay of the Building 7 complex. The only major costs involved with retaining the Test Section would be for capping both exposed ends of the Test Section and residing the High Bay after existing asbestos panels are removed.

Scope & Description

This Project at the Glenn Research Center is proposed for demolishing the bulk of the existing Altitude Wind Tunnel (AWT) circuit and adjacent AWT facilities and utilities currently part of the Building No. 7 and No. 8 complex.

Base Bid:

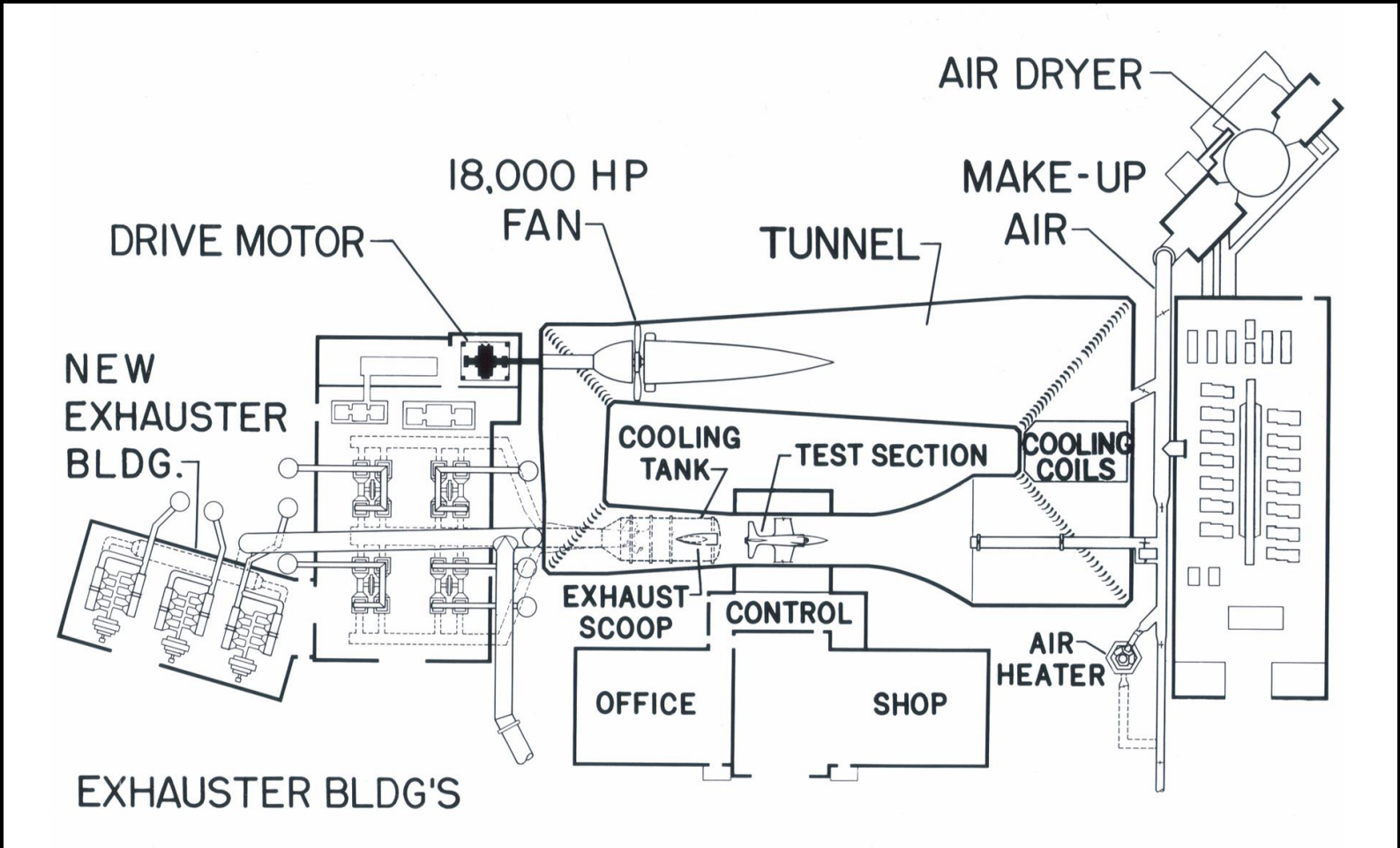
Remove the complete existing AWT circuit shell structure and exterior liner and insulation outside of the Building 7 High Bay area down to the top of concrete support piers and anchor foundations. Removal shall include all platforms, ladders, railings, structural steel support framing, and miscellaneous framing attaching to the tunnel shell. All metal from the demolition of the AWT will be weighed at GRC and taken offsite for recycling.

Furnish and install a new insulated metal panel siding system the exposed ends of the Test Section.

Completely remove Building No. 78 and the Vacuum Pump House to a minimum of 2.0 ft. below grade.

Remove all AWT loop concrete support piers and anchor foundations, except the anchor foundation of the west side of the High Bay portion of Building No. 7. Remove concrete to a minimum of 2.0 ft. below grade (the anchor foundations and the support piers extend approximately 14 feet below grade). Remove the Cooler Pit walls to a minimum of 2.0 ft. below the adjacent grade. All concrete removed during the demolition of piers and foundations will be weighed at GRC and taken offsite for recycling

Due to the historic nature of this tunnel complex, NASA will preserve the Wind Tunnel Test Section located inside Building 7 as a permanent visitor tour stop and set up for historical interpretation base upon the AWT's contributions to aircraft and aircraft engine development and contributions to the early Space program. Refurbishing the interior of the Test Section is not part of this project.



AWT schematic

Options:

Option No. 1: Remove completely the first floor Generator equipment and foundations to the first floor level in Building No. 8. Remove the ventilation fan in the ventilation shaft.

Option No. 2: Remove the AWT Main Drive Motor and support structure down to the third floor level at the southwest corner of Building No. 8.

Option No. 3: Remove the anchor foundation concrete on the west side of the Building No. 7 High Bay to a minimum of 2.0 ft. below grade.

Option No. 4: Regrade and repave the AWT demolition site.

Option No. 5: If the existing asbestos panels are removed, furnish and install all new replacement siding.

Customer Project Goals

The structures shall be removed safely according to Project Specifications and OSHA and Glenn Safety Office requirements. The Project shall be executed to minimize adjacent environmental at grade damage consistent with the project scope and budget. All hazardous material abatement shall be carried out in compliance with all Federal, State and Local environmental regulations and the GRC Environmental Programs Manual. All metal from the demolition of the Altitude Wind Tunnel will be recycled. The Project shall also be designed and field construction implemented to minimize the potential for damaging adjacent facilities. It is expected that there will be a range of impacts to adjacent facilities and occupants due to the demolition activity scheduled for this Project site. The AWT site is very congested which will require implementation planning to minimize impacts. Active facilities adjacent to the Project site include Buildings 7, 8, 9, 11, 78 and Substation B. There are numerous service utilities impacted by the Project and they will be terminated in ways to minimize service interruptions to adjacent system users. Some utilities will be rerouted. Demolition truck traffic will add to general site congestion and heavy demolition equipment will damage some existing pavement areas. Paving of the area opened up by the demolition will be paved as a method of storm water control, but will be of adequate strength to allow parking.

AWT and PSL Assessment

ENVIRONMENTAL

Trudy Kortes

AWT and PSL Demolition Environmental Issues

- Per regulatory requirements, a Draft Environmental Assessment (EA) has been prepared and will be advertised as available for review during a mandatory 30 day public comment period within the next 3-6 months.
- This document assures NASA's compliance with the National Environmental Policy Act which requires us to assess all environmental, technical, and economic factors prior to implementing a proposed action.
- The Draft EA assesses the baseline environment and the environmental impact due to the project(s).
  - Baseline + Proposed Action = Environmental Impact

Environmental Assessment

The National Environmental Policy Act requires all Federal Agencies to consider environmental, technical, and economic factors prior to implementing a proposed action.

A Draft Environmental Assessment is currently in internal review at Glenn Research Center and NASA Headquarters. Once the draft is finalized, it will be issued for public comment for 30 days. This is a regulatory requirement and all comments will be addressed in the final version of the EA. If anyone is interested in receiving a notification of the availability of the draft EA, please let me know after the meeting and I can see that you are added to a mailing list.

AWT and PSL Demolition Environmental Issues

- Currently, the Draft EA addresses the following areas:
  - Land Use
  - Climate and Air Quality
  - Water Resources (Surface and Groundwater)
  - Ambient Noise
  - Geology and Soils
  - Natural Resources
  - Threatened and Endangered Species
  - Socioeconomics
  - Cultural Resources (Historic Preservation)
  - Hazardous Materials and Waste Disposal
  - Transportation
  - Environmental Justice

Environmental Assessment

So, in the draft EA, we have made the following assessment. That the only issues with short term, temporary impacts are land use, air quality, and noise. The only long term impact deals with the cultural resources, or historic preservation issue. The short term impacts are due to construction equipment which will be used to demolish the structures causing temporary increased vehicle air emissions and also a temporary noise increase from those same vehicles and demolition work. Short term land use impacts are due to a decrease in parking space and altered pedestrian traffic, but long term land use would be positively impacted as these two projects by providing real estate for future new land uses.

Environmental Consequences of Proposed Action

Affected Area	Short Term Impacts	Long Term Impacts
Land Use	X	
Climate and Air Quality	X	
Surface Water		
Groundwater		
Ambient Noise	X	
Geology and Soils		
Natural Resources		

Environmental Consequences of Proposed Action

Affected Area	Short Term Impacts	Long Term Impacts
Threatened and Endangered Species		
Socioeconomics		
Cultural Resources (Historic Preservation)		X
Hazardous Materials and Waste Disposal		
Transportation		
Environmental Justice		
Cumulative Impacts		

1. We have met with the OHPO. They have come and have toured the facilities. They have reviewed our analysis and informally concur with our determinations. They are receptive to our proposed mitigation of adverse effects. They are interested in seeing what type of response the general public has to this proposed demolition. They have yet to make a written recordation of their opinion on the proposed demolition.
2. NASA has considered alternatives other than demolition of the facility. Moving the facilities is unrealistic. Rehabilitating these facilities would waste millions of dollars on facilities that are no longer needed. Adaptive reuse was considered for other Wind Tunnel uses, but Glenn's Aeronautic program support is greatly diminished with the low national resolve for aeronautic research – and no Adaptive Reuse need is available. Doing nothing is not a safe or wise approach.
3. Anne Power will speak more about the exciting ways in which we plan to document the facility's history so that we can tell the story for future generations.
4. As Citizens and Taxpayers, our audience can voice their concerns and opinions. We are open to suggestions. No irrevocable decisions have been made yet.
5. We also need to invite the Advisory Council on Historic Preservation to review and comment – that is one of our next steps.

Section 106 Historic Preservation Process

1. Consulting with the Ohio Historic Preservation Office
2. Considered alternatives to demolition, but found them cost prohibitive or not feasible:
    - Move, Rehabilitate, Adapt and Reuse, Do nothing
3. Working to Resolve Adverse Effects by:
    - Documentation of facilities: Drawings, Photographs and Files
    - Book and CD ROM
    - Display Boards for Tour stop or museum
    - Historical Marker
    - Keep Test Section space and chamber
4. Public involvement and comment (you can participate)
5. Consulting with National Advisory Council on Hist.Pres.

AWT and PSL Demolition Environmental Issues

Ms. Trudy Kortes, M.S.
Environmental Engineer/
National Environmental Policy Act Program Manager
NASA Glenn Research Center
Environmental Management Branch
Phone: 216–433–3632
Trudy.F.Kortes@nasa.gov