


The slide features a large, semi-transparent circular logo in the center. The logo contains the text 'NATIONAL TRAFFIC SYSTEM' at the top, 'NTS' in large letters in the middle, and 'TRADITION \* SERVICE' at the bottom. Below the logo, the date 'June 12, 2003' is displayed. To the left of the logo is a vertical red bar. In the top-left corner of the slide area, there is a small circular icon with 'NTS' and an American flag motif. At the bottom of the slide, there is a footer with three items: 'WB8RCR 12-Jun-03', 'NTS Improvement Overview', and 'Slide 1'.

# NTS Improvement

June 12, 2003

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## Basic Approach

- Analyze available data
  - Is there a problem?
  - Can we do anything?
- Agree on a target
- Analyze some more
  - Validate problem/opportunity
  - Understand Drivers
- Develop Improvement Plan

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The approach proposed is based on the Six Sigma MAIC process

There is a little more detail in my report which most of you have seen, and a lot more detail online.

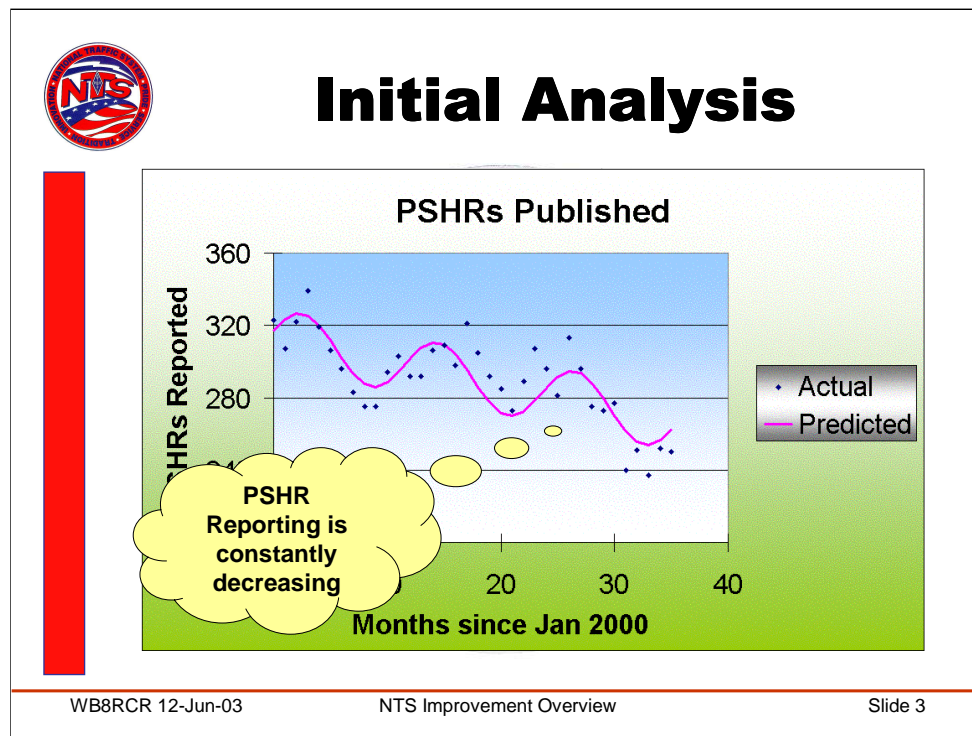
Basically, the approach involves looking at the data to see if we, in fact, have a problem, identifying whether it seems possible to do anything about it, then set a target.

For MAIC projects, the target is typically about a one sigma shift. A much smaller shift isn't usually worth a concerted effort, and a larger shift requires discarding the current process and starting with a clean sheet of paper.

Once a target is agreed on, we look harder at the data to evaluate how realistic the target is, and to uncover drivers.

More data is gathered to understand that the drivers can, in fact, affect the outcome.

Once we have confidence in our plan, only then do we turn to implementation.

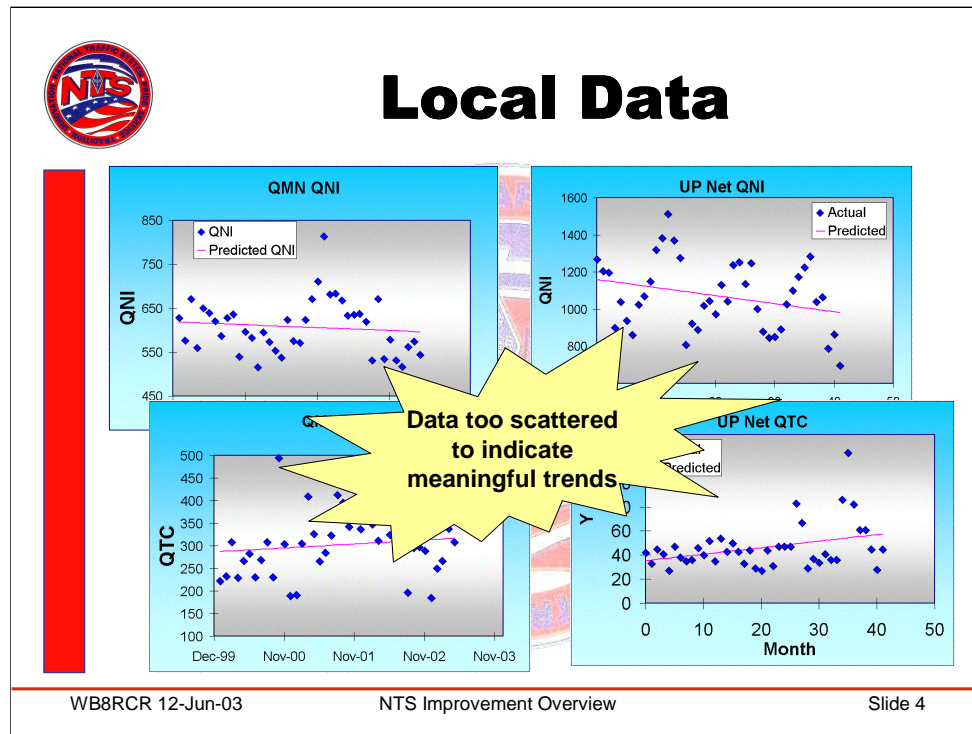


Initially, the data that was available was PSHR reports from QST. Looking at this data we can see there is a problem.

See my report for more details of what is going on here

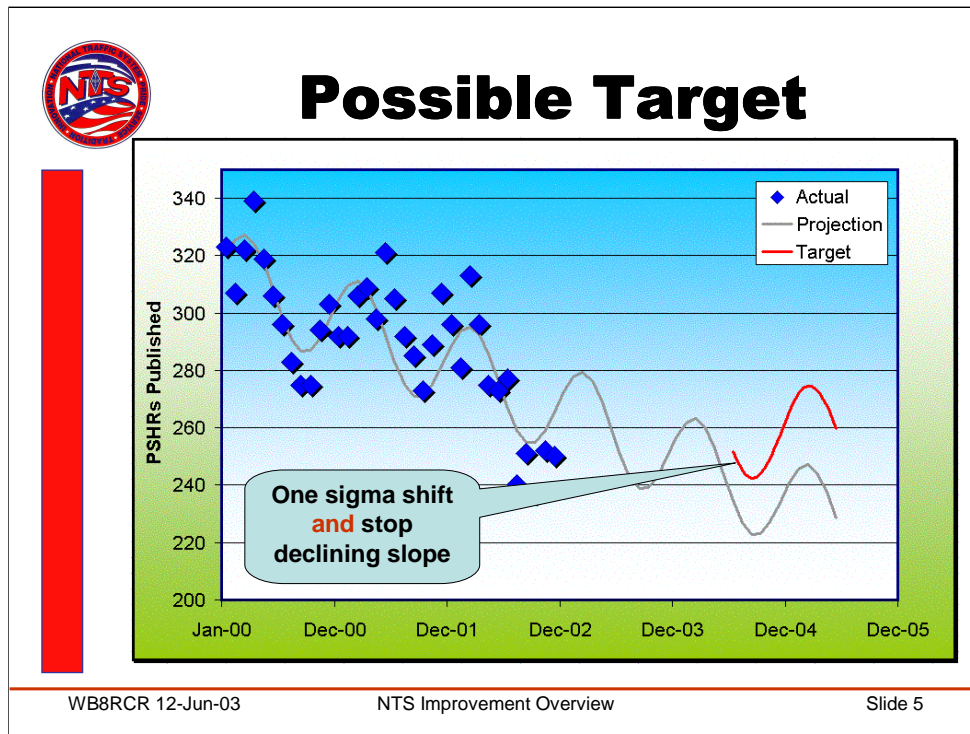
We see a similar trend with average scores reported.

We see significant numbers of amateurs consistently reporting high scores and then ceasing reporting suddenly.



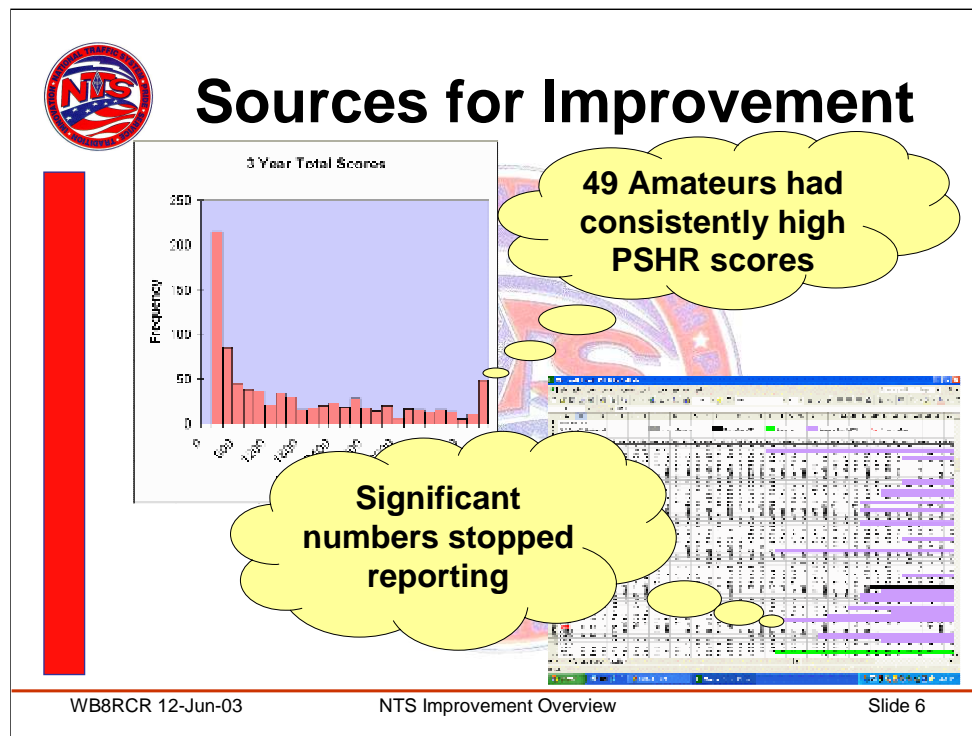
Locally, the data is too scattered to be confident of any trends. It is interesting, however, that both QMN and UPN show increasing traffic with decreasing participation.

Once again, however, the correlation here is poor.



Before setting a target, we need to evaluate additional data. Then, we need to get agreement on a worthwhile objective.

One possible objective would be a one sigma shift in the number of reports received each month. However, we also need to reverse the negative trend. Such an objective is achievable and is represented by the red line.



Even within the initial PSHR data, the data leads us to some sources of improvement.

Some amateurs consistently report high PSHR scores. What makes them different? What motivates them?

A significant number of amateurs were routinely reporting significant PSHR scores and then suddenly stopped. What happened?



## Possible Improvements


- Initial discussions were had with some of the best performers and some who had stopped reporting
- 2 common threads emerged:
  - **Recognition**
    - It appears even a little recognition helps keep people involved and attract new people
  - **Training**
    - Many people simply aren't aware

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Initial email and land line exchanges with some of the outliers in the PSHR data revealed a significant impact of recognition and training.

It also became apparent that attempts to attract new amateurs to NTS have alienated some old timers.

We need to pursue additional contacts to validate these findings; at this point it would be premature to act on them.



## Another Possibility

- We need more reliable circuits when conditions are difficult
- It is probably unrealistic to assume that we can significantly increase CW interest
- Younger amateurs are attracted by digital modes
- How can we strengthen the digital portion of NTS without disenfranchising the old timers who are currently the core?

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Here in Michigan, phone contacts across the state are often challenging. Propagation generally dictates 75 meters, but 75 meter phone requires big antennas and big power, neither of which can be counted on under emergency situations.

CW often works better, but it may be unrealistic to think we can continue to recruit enough CW operators.


Digital modes are attractive – *but*.

HF packet is complex and finicky – not what you need in emergency situations

There are good, theoretical reasons why PSK is a problem, and effective traffic techniques on PSK have failed to emerge

Can we implement digital technology within NTS in a way that is useful in emergency situations, and doesn't alienate those folks who are currently the mainstay of the system?





## Next Steps

- ✓ Agree on targets
- ✓ Collect more data
- ✓ Additional evaluation of Y's
- ✓ Exploration of X's
- ✓ Model X vs. Y
- ✓ Implement

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After looking at additional data, and determining the degree of support from Newington, we need to set a stake in the ground and go after it.

Then, of course, more data and more evaluation.

We can probably generate models from differences between sections.

We may want to do some development of digital, or other, techniques, potentially spinning off a separate project.

Once we have confidence that changes will be positive, we can turn to implementation.



## Hungry for more detail?

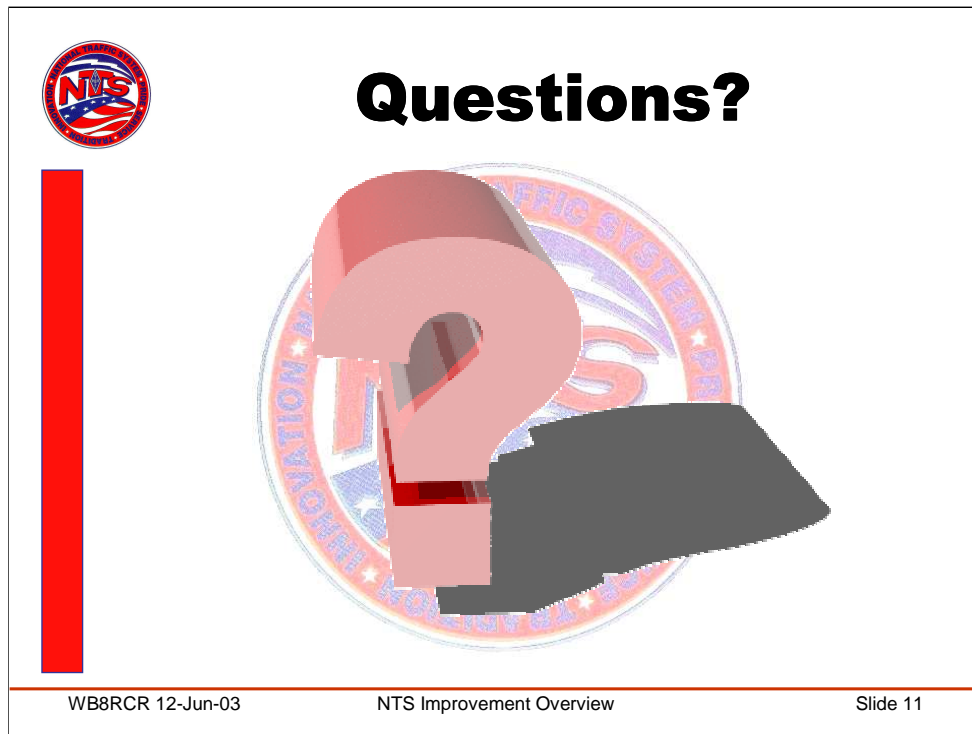
[www.qsl.net/wb8rcr/NTS.html](http://www.qsl.net/wb8rcr/NTS.html)

- An overview of the process
- A report on the initial research
- Some details on seasonal affects
- Outline of solution exploration approach
- This presentation with notes

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This page contains links to all the material developed so far, in PDF format.

As material continues to be developed it will be shared here.



The slide features a large, 3D-style red question mark in the center. Behind the question mark is a circular logo for the National Transportation Safety Board (NTSB) with the text "NTSB NATIONAL TRANSPORTATION SAFETY BOARD" and "TRAFFIC SYSTEMS". To the left of the question mark is a vertical red bar. In the top left corner of the slide is a smaller circular logo with "NTS" and "RESEARCH" text. The word "Questions?" is written in a large, bold, black font at the top center of the slide.

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