



# ENGINEERING DEPARTMENTS GOING DIGITAL

MOVING BEYOND SPREADSHEETS, BLUEPRINTS AND PAPER MAPS

## **NORTHSHORE UTILITY DISTRICT**

STEPHEN DENNEHY, PE – ENGINEERING DIRECTOR

APARNA KHANAL, PE – DEVELOPMENT ENGINEERING SUPERVISOR





# SYNOPSIS

*GETTING ENGINEERS TO MOVE BEYOND THE TOOLS OF THE PAST AND INTO THE 21ST CENTURY.*

*A LOOK AT SOME OF THE NEW AND POWERFUL TOOLS NORTHSORE UTILITY DISTRICT USES TO HELP MANAGE THE ENGINEERING DEPARTMENT AS WELL AS OTHER DEPARTMENTS OF THE DISTRICT.*



# PROJECT MANAGEMENT & TRACKING

SPREADSHEETS HAVE BEEN THE GO-TO TOOL FOR ENGINEERS TO TRACK PROJECTS FOR YEARS, BUT THEY DEFINITELY HAVE THEIR LIMITATIONS.

**MONDAY.COM** IS A CUSTOMIZABLE WEB AND MOBILE WORK MANAGEMENT PLATFORM SELECTED BY NORTHSHORE TO REPLACE SPREADSHEETS FOR THIS TASK

- WEB BASED PRODUCT – NO SOFTWARE DOWNLOADS TO COMPUTER
- HIGHLY CUSTOMIZABLE
- USER FRIENDLY WITH MULTIPLE USERS AT THE SAME TIME
- BUILT-IN AUTOMATIONS TO SIMPLIFY WORKFLOW
- QUICKLY GROUP, SORT AND FILTER DATA, SAVING TO VIEWS
- INCLUDES GANTT CHART VIEWS FOR SCHEDULING
- TRACK STATUS UPDATES AND AUTOMATICALLY NOTIFY SELECT USERS
- ATTACH DOCUMENTS TO A PROJECT
- CREATE DASHBOARDS TO VIEW SELECTED DATA
- INTEGRATE WITH OTHER APPLICATIONS (ARCGIS)
- COST IS APPROXIMATELY \$16/MONTH PER USER

# INSPECTION REPORTS

MANY AGENCIES AND CONSULTANTS USE CUSTOM DATABASE APPLICATIONS OR EVEN WORD PROCESSING DOCUMENTS TO PREPARE INSPECTION REPORTS FOR CONSTRUCTION PROJECTS

**DASHPIVOT** IS THE CUSTOMIZABLE WEB-BASED APPLICATION THAT NORTHSORE CHOSE TO PREPARE INSPECTION REPORTS FOR CONSTRUCTION PROJECTS

- WEB BASED PRODUCT – NO SOFTWARE DOWNLOADS TO COMPUTER
- HIGHLY CUSTOMIZABLE
- CREATE CUSTOM INSPECTION REPORT TEMPLATES FOR MULTIPLE PROJECT TYPES
- INSPECTIONS ARE DONE ON THE MOBILE APP THROUGH DICTATION
- PHOTOS ARE TAKEN THROUGH THE MOBILE APP AND INSERTED DIRECTLY INTO THE REPORT
- PHOTOS ARE AUTOMATICALLY DATE, USER AND TIME STAMPED WITH LOCATION SHOWN ON MAP
- ALL INSPECTION ACTIVITY FOR THE AGENCY IS SHOWN ON HOME PAGE
- DAILY REPORTS CAN BE OUTPUT TO PDF FOR REVIEW AND DISTRIBUTION
- COST IS APPROXIMATELY \$29/MONTH PER USER, WHICH IS EASILY RECOVERED IN INCREASED PRODUCTIVITY

# GIS MAP

MANY AGENCIES CONTINUE TO USE PAPER MAPS OR STATIC PDF MAPS FOR TRACKING UTILITIES AND FOR SHARING WITH CUSTOMERS

- AS-BUILT REQUESTS TO STAFF VIA EMAIL, PHONE OR IN PERSON USED TO BE THE WAY TO GET INFORMATION ON UTILITIES
- MAPS AREN'T INTERACTIVE
- PAPER MAPS NOT TYPICALLY UPDATED FREQUENTLY
- VERY INEFFICIENT PROCESS FOR SHARING INFORMATION

# GIS MAP

**ARCGIS** NOW BEING USED BY NORTHSORE FOR INTERNAL AND EXTERNAL CUSTOMER TO ACCESS UTILITY INFORMATION

- NOW ACCESSIBLE ON THE WEBSITE
- FOR EXTERNAL USERS, NOT EVERYTHING IS PUBLISHED
- SIGNIFICANT WORKLOAD REDUCTION
- SUBSTANTIALLY MORE INFORMATION AVAILABLE ON GIS MAPS VS PAPER
- MAPS ARE UPDATED FREQUENTLY WITH INFORMATION FROM USERS
- GIS HAS DYNAMIC LINK TO MONDAY.COM AND UPDATE TO MONDAY AUTOMATICALLY UPDATES THE MAP

# PLAN REVIEW

HISTORICALLY ENGINEERS HAVE PRINTED OUT PLAN SETS AND SUBMITTALS FOR REVIEW AND REDLINING

**BLUEBEAM** WAS CHOSEN BY NORTHSHORE AS THE TOOL TO MARKUP, EDIT AND SHARE PDF DOCUMENTS

- NUD REQUIRES ALL PLANS AND SUBMITTALS TO BE SUBMITTED ELECTRONICALLY
- EFFICIENT WAY TO REVIEW PLANS – NO HAND MARKUPS
- CUSTOMIZABLE MARKUP TOOLS
- COMMENTS CAN BE ORGANIZED AND REUSED WITHOUT TYPING EVERY TIME
- EASY TO TRACK
- CLEAN MARKUP AND EASY FOR VIRTUAL REVIEW MEETINGS
- DOCUMENTS READILY ACCESSIBLE DIGITALLY
- CHECKLIST ON [MONDAY.COM](http://MONDAY.COM)

The background features a light gray gradient with several realistic water droplets of various sizes scattered in the corners. The droplets have highlights and shadows, giving them a three-dimensional appearance. One large droplet is in the top right, another in the top left, and several smaller ones are scattered throughout the corners.

**QUESTIONS?**

# LINKS

- <HTTPS://NUD-TEAM.MONDAY.COM/BOARDS/842247669/VIEWS/13171653>
- <HTTPS://NUD-TEAM.MONDAY.COM/BOARDS/870682011/VIEWS/32780610>
- <HTTPS://DASHPIVOT.COM/HOME/COMPANIES/60CD1D72E5DFDF2040002D33/ACTIVITY>
- [HTTPS://GISPORTAL.NUD.NET/GISPORTAL/APPS/WEBAPPVIEWER/INDEX.HTML?ID=477908AC91B140468D3B27E4EA3C5C3D&EXTENT=-13621959.582%2C6055441.8775%2C-13585269.8084%2C6072582.8811%2C102100&SHOWLAYERS=TEMPLAYERWATERMAINTIER1\\_8503\\_0%3BNUDNAVWATERSYSTEM\\_8937\\_0%3BNUDNAVWATERSYSTEM\\_8937\\_1%3BNUDNAVWATERSYSTEM\\_8937\\_2%3BNUDNAVWATERSYSTEM\\_8937\\_3%3BNUDNAVWATERSYSTEM\\_8937\\_5%3BNUDNAVWATERSYSTEM\\_8937\\_6%3BNUDNAVWATERSYSTEM\\_8937\\_7%3BNUDNAVWATERSYSTEM\\_8937\\_10%3BNUDNAVWATERSYSTEM\\_8937\\_12%3BNUDNAVWATERSYSTEM\\_8937\\_13%3BNUDNAVWATERSYSTEM\\_8937\\_14%3BNUDNAVWATERSYSTEM\\_8937\\_15%3BNUDNAVWATERSYSTEM\\_8937\\_18%3BNUDNAVWATERSYSTEM\\_8937\\_21%3BNUDNAVWATERSYSTEM\\_8937\\_22%3BNUDNAVSEWERSYSTEM\\_587\\_0%3BNUDNAVSEWERSYSTEM\\_587\\_3%3BNUDNAVSEWERSYSTEM\\_587\\_4%3BNUDNAVSEWERSYSTEM\\_587\\_7%3BNUDNAVSEWERSYSTEM\\_587\\_8%3BNUDNAVSEWERSYSTEM\\_587\\_9%3BNUDNAVSEWERSYSTEM\\_587\\_10%3BNUDNAVSEWERSYSTEM\\_587\\_11%3BNUDNAVSEWERSYSTEM\\_587\\_12%3BNUDNAVSEWERSYSTEM\\_587\\_13%3BNUDNAVSEWERSYSTEM\\_587\\_14%3BSTORMSYSTEM\\_UNDERCONSTRUCTION\\_616\\_0%3BSTORMSYSTEM\\_UNDERCONSTRUCTION\\_616\\_1%3BSTORMSYSTEM\\_UNDERCONSTRUCTION\\_616\\_2%3BNUDNAVBASELAYERS\\_3021%3BNUDNAVBASELAYERS\\_3021\\_3%3BNUDNAVBASELAYERS\\_3021\\_4%3BNUDNAVBASELAYERS\\_3021\\_5%3BNUDNAVBASELAYERS\\_3021\\_8%3BNUDNAVBASELAYERS\\_3021\\_11%3BNUDNAVBASELAYERS\\_3021\\_13%3BNUDNAVPROJECTS\\_9002\\_0%3BNUDNAVPROJECTS\\_9002\\_1%3BNUDNAVPROJECTS\\_9002\\_2%3BNUDNAVPROJECTS\\_9002\\_3%3BNUDNAVPROJECTS\\_9002\\_4%3BNUDNAVPROJECTS\\_9002\\_5%3BNUDNAVPROJECTS\\_9002\\_6%3BNUDNAVPROJECTS\\_9002\\_10%3BNUDNAVPROJECTS\\_9002\\_11%3BNUDNAVPROJECTS\\_9002\\_13%3BNUDNAVPROJECTS\\_9002\\_14%3BEASEMENTENCROACHMENT\\_6398\\_0](HTTPS://GISPORTAL.NUD.NET/GISPORTAL/APPS/WEBAPPVIEWER/INDEX.HTML?ID=477908AC91B140468D3B27E4EA3C5C3D&EXTENT=-13621959.582%2C6055441.8775%2C-13585269.8084%2C6072582.8811%2C102100&SHOWLAYERS=TEMPLAYERWATERMAINTIER1_8503_0%3BNUDNAVWATERSYSTEM_8937_0%3BNUDNAVWATERSYSTEM_8937_1%3BNUDNAVWATERSYSTEM_8937_2%3BNUDNAVWATERSYSTEM_8937_3%3BNUDNAVWATERSYSTEM_8937_5%3BNUDNAVWATERSYSTEM_8937_6%3BNUDNAVWATERSYSTEM_8937_7%3BNUDNAVWATERSYSTEM_8937_10%3BNUDNAVWATERSYSTEM_8937_12%3BNUDNAVWATERSYSTEM_8937_13%3BNUDNAVWATERSYSTEM_8937_14%3BNUDNAVWATERSYSTEM_8937_15%3BNUDNAVWATERSYSTEM_8937_18%3BNUDNAVWATERSYSTEM_8937_21%3BNUDNAVWATERSYSTEM_8937_22%3BNUDNAVSEWERSYSTEM_587_0%3BNUDNAVSEWERSYSTEM_587_3%3BNUDNAVSEWERSYSTEM_587_4%3BNUDNAVSEWERSYSTEM_587_7%3BNUDNAVSEWERSYSTEM_587_8%3BNUDNAVSEWERSYSTEM_587_9%3BNUDNAVSEWERSYSTEM_587_10%3BNUDNAVSEWERSYSTEM_587_11%3BNUDNAVSEWERSYSTEM_587_12%3BNUDNAVSEWERSYSTEM_587_13%3BNUDNAVSEWERSYSTEM_587_14%3BSTORMSYSTEM_UNDERCONSTRUCTION_616_0%3BSTORMSYSTEM_UNDERCONSTRUCTION_616_1%3BSTORMSYSTEM_UNDERCONSTRUCTION_616_2%3BNUDNAVBASELAYERS_3021%3BNUDNAVBASELAYERS_3021_3%3BNUDNAVBASELAYERS_3021_4%3BNUDNAVBASELAYERS_3021_5%3BNUDNAVBASELAYERS_3021_8%3BNUDNAVBASELAYERS_3021_11%3BNUDNAVBASELAYERS_3021_13%3BNUDNAVPROJECTS_9002_0%3BNUDNAVPROJECTS_9002_1%3BNUDNAVPROJECTS_9002_2%3BNUDNAVPROJECTS_9002_3%3BNUDNAVPROJECTS_9002_4%3BNUDNAVPROJECTS_9002_5%3BNUDNAVPROJECTS_9002_6%3BNUDNAVPROJECTS_9002_10%3BNUDNAVPROJECTS_9002_11%3BNUDNAVPROJECTS_9002_13%3BNUDNAVPROJECTS_9002_14%3BEASEMENTENCROACHMENT_6398_0)
- <HTTPS://NUD.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=7A1162D7A9A441788DA9DC014B510F19>