

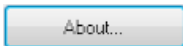
Current Version and Updates

- Current version information
 - Currently at 6.0
 - Free upgrade for current NSN Subscribers
 - Only available on Monday, Tuesday, or Wednesday 8AM-5PM Central Time each week. That is also when you should do your monthly saves, shut down, and re-start computer. Find the update at www.mytoronsn.com

- Windows 10
Lynx is fully compatible to run in Wondows 10


- How to find your version?

- If Lynx is not running, go to Lynx Manager and hit the About button



Info when to upgrade can be found at:

- Lower left NSN button in Lynx



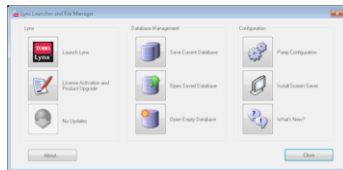
- www.mytoronsn.com
- an email from Toro NSN if your address is on file

- If Lynx is not running, and you can't open Lynx File manager, go to C:\Toro_Lynx\Version – open with Notepad
 - Current version is 6.0
 - You can also do this while Lynx is running
- If Lynx is running, go to Advanced Setup → Preferences – the top of the screen will tell you



- Current versions – Champion has the most features and standard has the least functionality.
 - Lynx SE 6.0 (Standard Edition)
 - Lynx PE 6.0 (Professional Edition)
 - Lynx CE 6.0 (Champion Edition)

- Lynx Start and Updates



- Old update button is now a way to set-up email / text notifications to your phone for any alarm in Lynx you have set-up. Available updates will appear in the bottom middle beginning with 7.0.
- Save Database – Before update and create second copy – thumb drive, email, cloud based
- First install any windows updates on computer – lower right taskbar or control panel
 - Computer will probably need to re-start itself
- Go to www.mytoronsn.com
- After update – re-start computer, re-launch Lynx
- Open Database
- Backup Database – After update

VIDEO Saving and Backing Up

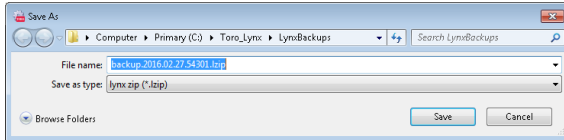
Follow us on:



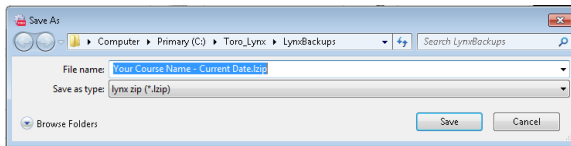
- Save your data Using Lynx File Manager
 - Select Save Current Database



- Location it will save the database is C: \ Toro Lynx \ Lynx Backups



- Save it with your course name – current date year first (example: My Course CC – 2016-3-15)



- Backup the data once a month at minimum, or after any significant changes.
- Backup the data to Dropbox, cloud, email it to yourself, thumb drive
- SAVE, SAVE, SAVE – You cannot fill the hard drive on a Toro NSN computer

- Contacting NSN - button

- Click on it and make sure your information is there, if not call NSN.
- Send all suggestions for enhancements direct to engineers via button.



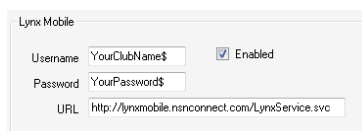
Clearing History from Database

- This process is no longer needed – You may want to discard handheld radio commands and some applications, but all other information can be kept year or year with no harm to performance.

System Settings

- Advance Setup menu
 - Preferences

- Lynx mobile - To enable the Lynx Mobile device(s) contact Toro NSN to set up an account and obtain a username and password. Enter the account information in the appropriate boxes, click Enable and exit the screen. Then close Lynx and re-open to activate your mobile controls.



- Begin watering day – Automatic Synchronize – This is the time of day when Lynx begins calculating information for the next irrigation cycle. It also defines the Day Change Time. This is done to allow the Course Report to include all irrigation activity for an irrigation day. Choose a System Update time at least 30 minutes prior to the first irrigation start time. The check box next to the time must be checked for Lynx to automatically do an update.

Begin Watering Day 12:00 PM Automatic Synchronize

- Longitude/latitude - needed for sunset and sunrise (for “Stop at” times). Look up on google maps for your location.

Latitude 37 Deg 42 Min North
 Longitude 75 Deg 7 Min West
 Altitude 20 ft.
 Time Zone (UTC-05:00) Eastern Time (US & Canada)
 Offset 0

Control System

Control System

- Satellite or Station group – max stations on (example of GDC shown)

Station Group	Name	Number of Stations	Simultaneous Stations	Maximum Stations
1	Grp 1	620	100	800
2	Grp 2	450	100	800

- The Station information shown below will stay on the screen as you scroll right.

Station	Decoder Offset	Decoder Address	Name	Area	Hole	Station Tag
1	1	2E3DC	1GR1	Greens	1	1
2	1	3D97A	1GR2	Greens	1	2
3	1	2DEE3	1GR3	Greens	1	3

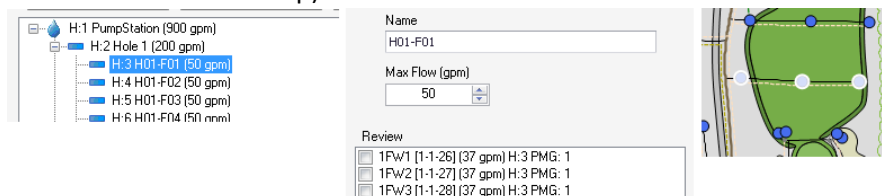
- Data fields – change information and it becomes permanent upon clicking another cell.

Number of Sprinklers	Sprinkler Model	Nozzle Model	Arc	Pressure (psi)	Nozzle Flow (gpm)	Station Flow (gpm)	Pattern	Sprinkler Spacing	Row Spacing (ft)	Precip Rate (in/hr)	Turf Guard	Club House	Auto Cycle Max Time	Auto Cycle Min Soak	Station Volts	Switch	Terminal Station	Total Area (ft ²)
1	INF35-4.8355	33	360	80	23.80	23.80	Rectangle	60	60	0.64	Sensor 0	Unassigned	0	0	15	<input type="checkbox"/>	<input type="checkbox"/>	3,600
1	INF35-4.8355	33	360	80	23.80	23.80	Rectangle	60	60	0.64	Sensor 0	Unassigned	0	0	15	<input type="checkbox"/>	<input type="checkbox"/>	3,600
1	INF35-4.8355	33	360	80	23.80	23.80	Rectangle	60	60	0.64	Sensor 0	Unassigned	0	0	15	<input type="checkbox"/>	<input type="checkbox"/>	3,600

- Importance of accurate data, must match what is in the field, garbage in garbage out
- Switches can be set up by selecting the switch check box.

Hydraulic

- Pump max, and ramp, mustard (color) means unassigned
- All assigned stations flash on map – This is very helpful in finding things that are assigned to the wrong hydraulic link. With auto-zoom it will zoom to show you all heads on that link. (They will blink in white on the map).



H:1 PumpStation (900 gpm)
 H:2 Hole 1 (200 gpm)
 H:3 H01-F01 (50 gpm)
 H:4 H01-F02 (50 gpm)
 H:5 H01-F03 (50 gpm)
 H:6 H01-F04 (50 gpm)

Name: H01-F01
 Max Flow (gpm): 50

Review:
 1FW1 [1-1-26] (37 gpm) H:3 PMG: 1
 1FW2 [1-1-27] (37 gpm) H:3 PMG: 1
 1FW3 [1-1-28] (37 gpm) H:3 PMG: 1

○ Map

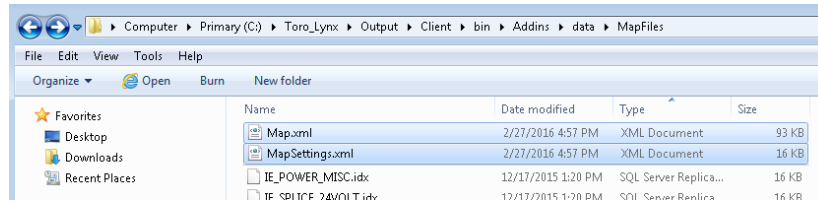
- Any map (graphical representation of the facility, overhead picture, scanned picture of the scorecard, etc...) This file must be in one of the following formats:
 - JPG
 - BMP
 - TIF (Please note that a TIF file can be extremely large; files over 80meg have been shown to have a detrimental effect of the operations of Lynx)

- A World file (obtained from NSN)
 This world file must have the exact same name as the picture file
 A world File is simply a text file with coordinates in it
 The file extension is reflective of the picture type, that is:

- If the picture is a JPG; the extension of the World File is "JGW"
- If the picture is a TIF; the extension of the World File is "TFW"
- If the picture is a PNG; the extension of the World File is "BPW"

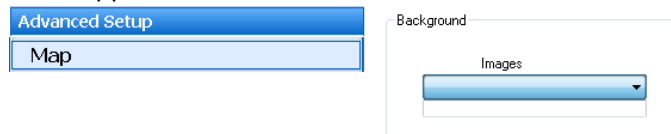
- Setting up the Map and the World File in Lynx:

1. Close Lynx and save the data using the Lynx File Manager
2. Navigate to: C:\Toro_Lynx\Output\Client\bin\Addins\data\Mapfiles



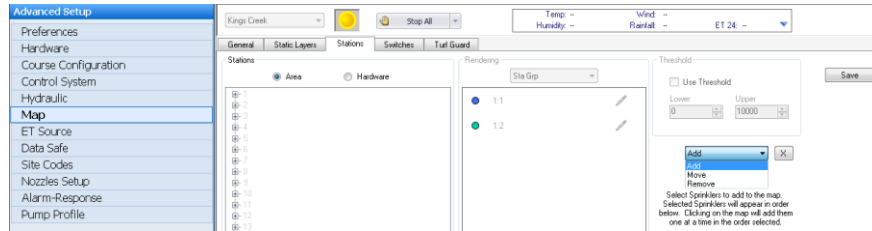
3. (Copy the picture and the World File into this directory (Note that there are two files that already exist: Map.XML and MapSettings.XML. DO NOT delete these files)
4. Close the Explorer window and start Lynx
5. Go to: Advanced → Map

6. On the General Tab and the Background control pane, you should now see your Image Name. Please note that this pane is restricted to its current width, so long file names could appear truncated.

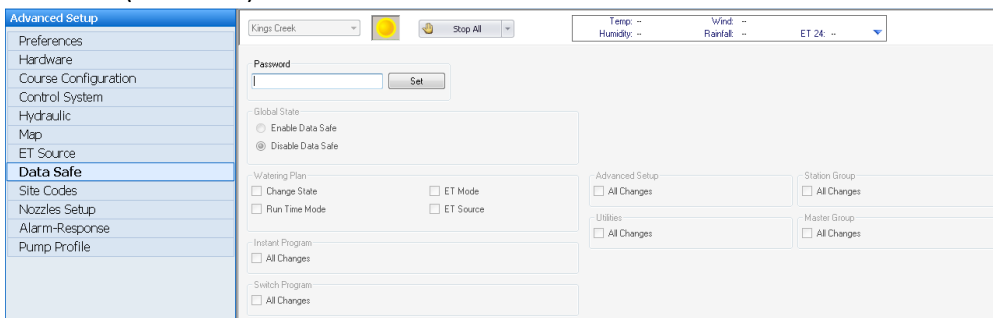


7. Click on the Image name
8. Press the "Set" button.
 Now that you have your overhead picture into Lynx, the process of adding the Lynx Interactive Dots (LID) can begin.

- Adding stations to your own map is very easy in version 6
- .0
 1. Go into Map – then Stations tab at the top
 2. Follow the help screens on adding the heads

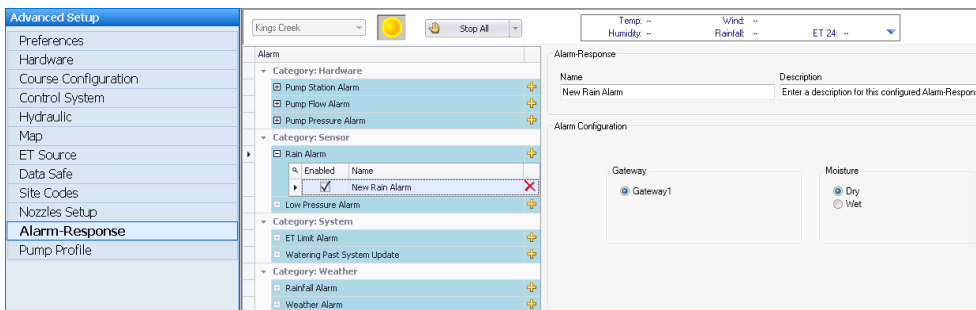
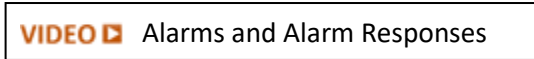


○ Data safe (Password)

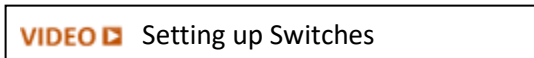


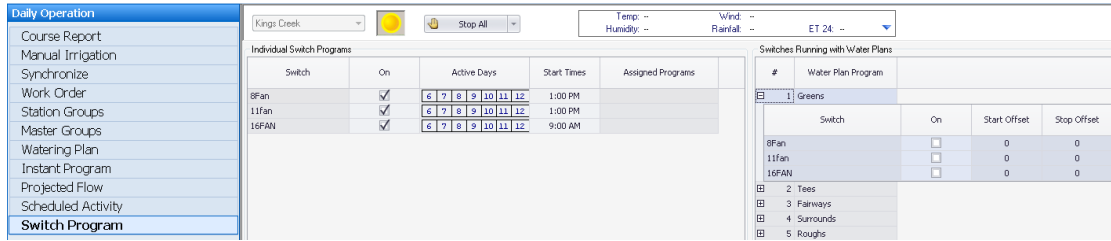
○ Alarm Response

- Pump alarm
- Rain alarm
 - To re-calculate based on rainfall use the rain re-flow alarm
 - To put the system on rainhold based on rainfall amount use the Weather alarm and select rainfall 24hr
- Sensor alarm – rain click
- Weather alarm



○ Switch Program





- Weather Stations
 - Communicate with either Campbell Scientific and Spectrum Technology Watch Dog

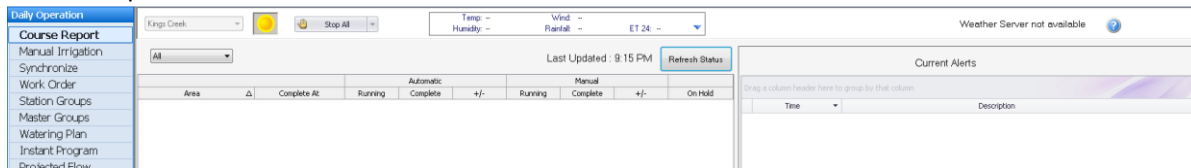
- Favorites
 - Right click to add, grab and move up and down in order

- Turf Guard

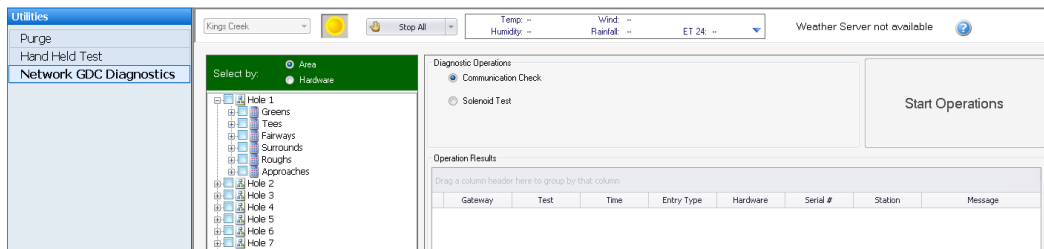
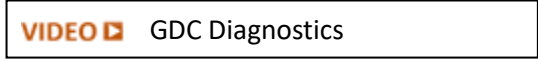


Troubleshooting

- Course Report

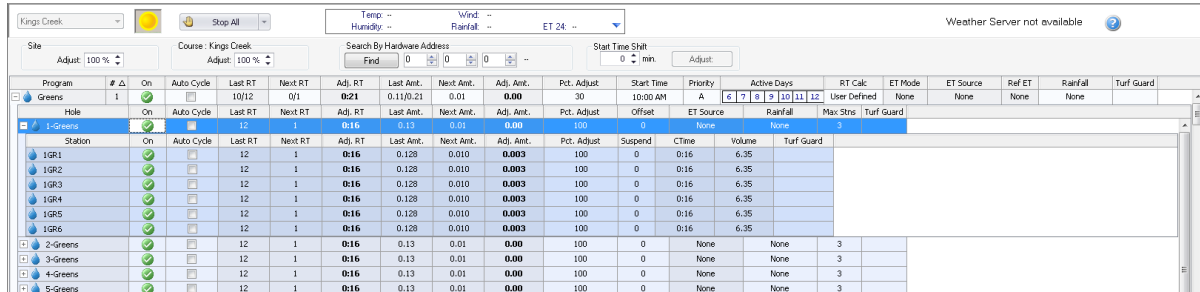


- Utility
 - Diagnostics
 - Change central/local mode from Lynx



Daily Operations

- Watering Plan



Program	#	On	Auto Cycle	Last RT	Next RT	Adj. RT	Last Amt.	Next Amt.	Adj. Amt.	Pct. Adjust	Start Time	Priority	Active Days	RT Calc	ET Mode	ET Source	Ref ET	Rainfall	Turf Guard
Greens	1	On	10/12	0/1	0:21	0.11/0.21	0.01	0.00	0.00	30	10:00 AM	A	1 2 3 4 5 6 7 8 9 10 11 12	User Defined	None	None	None	None	
Hole		On	Auto Cycle	Last RT	Next RT	Adj. RT	Last Amt.	Next Amt.	Adj. Amt.	Pct. Adjust	Offset	ET Source	Rainfall	Max Str	Turf Guard				
1-Greens		On	Auto Cycle	12	1	0:16	0.13	0.01	0.00	100	0	None	None	3					
Station		On	Auto Cycle	Last RT	Next RT	Adj. RT	Last Amt.	Next Amt.	Adj. Amt.	Pct. Adjust	Suspend	CTime	Volume	Turf Guard					
1GR1		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
1GR2		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
1GR3		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
1GR4		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
1GR5		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
1GR6		On	Auto Cycle	12	1	0:16	0.128	0.010	0.003	100	0	0:16	6.35						
2-Greens		On	Auto Cycle	12	1	0:16	0.13	0.01	0.00	100	0	None	None	3					
3-Greens		On	Auto Cycle	12	1	0:16	0.13	0.01	0.00	100	0	None	None	3					
4-Greens		On	Auto Cycle	12	1	0:16	0.13	0.01	0.00	100	0	None	None	3					
5-Greens		On	Auto Cycle	12	1	0:16	0.13	0.01	0.00	100	0	None	None	3					

- Minutes vs. Volume
- Start time shift
- Search by hardware – GDC hardware address
- Adjust for a duration
- Suspend – better than hold, because it removes it from the system
- Auto-cycle
- Set max stations per program – greens → 1
- Offset if you have a tight water window, or a small pump station
- Understand % adjust permanently (small arrows) or for a duration (large arrow), and turning a station off permanently (green check) or for a duration (suspend).

VIDEO Watering Plan – Part 1

VIDEO Watering Plan – Part 2

- Synchronize
 - VP and LTC plus upgraded to VP via faceplate
 - kit systems

VIDEO Synchronize

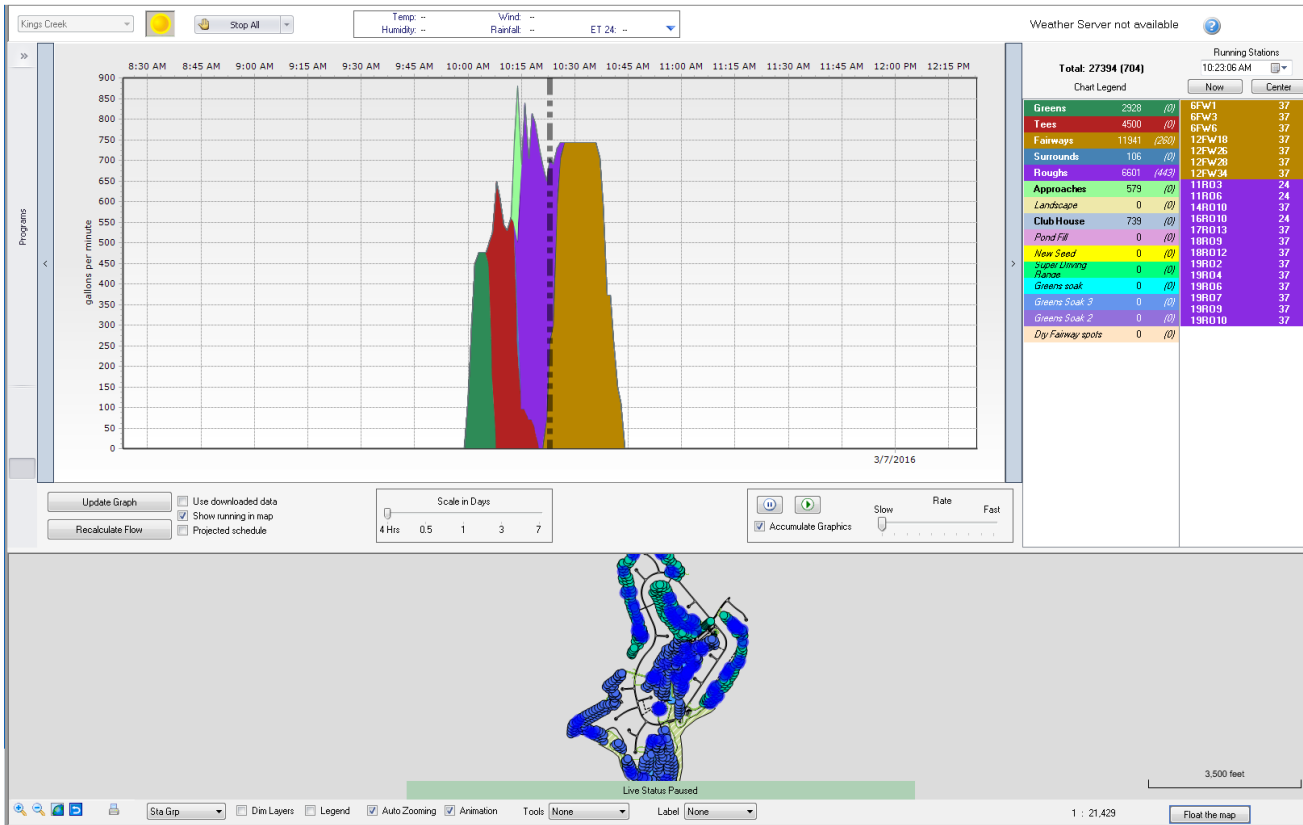
Red means breakdown in communication

VIDEO Using the Map View

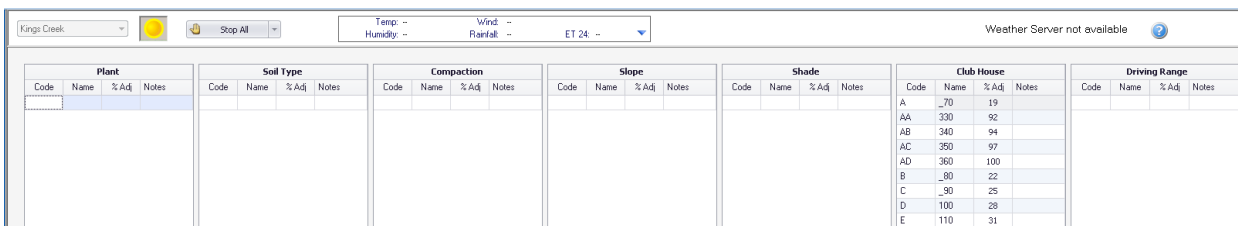
- Map View
 - Check setting to auto zoom and select any head to find it in the database or visa-versa click any station in the database to find it on the map.

Projected Flow Graph

- Projected Flow
 - How to run it
 - Watch it in map – accumulated graphics
 - Errors messages now show up in marquee when you do projected flow



Site Codes - used for percent adjust of many stations not in the same program. Could be a function around the clubhouse to turn off all the stations in different programs, wedding, shade of fairway and rough, or annual wet spots throughout the course that occur each year.



The screenshot shows a table with columns for Plant, Soil Type, Compaction, Slope, Shade, Club House, and Driving Range. Each column has sub-columns for Code, Name, %Adj, and Notes. The Club House section contains the following data:

Code	Name	%Adj	Notes
A	_70	19	
AA	330	92	
AB	340	94	
AC	350	97	
AD	360	100	
B	_80	22	
C	_90	25	
D	100	28	
E	110	31	
-	...		

Building Programs

- Instant program
 - Build standard
 - Build sequential
 - Map select
 - Once complete it is listed in the watering plan and can be used in auto, satellite, radio, or apps.
 - **Manual irrigation**
- Manual irrigation
 - Minimally flow managed – only the pipe it is attached to, not the tree above it
 - Logs amount in course report
- With map
 - Selecting heads on map
 - Run time has been changed to a default of 5 minutes, It can be adjusted from there.
- Without map
 - Selecting heads on drill down screen – station tag or hardware
 - Again default run time of 5 minutes, if adjusted it is hours : minutes, minutes : seconds

VIDEO Instant Programs

VIDEO Manual Irrigation

Reports

- Report Generator
 - Water usage
 - Flow
 - Station assignment – probably not needed with mustard (color) in the Hydraulic tree, but very valuable to see which stations are assigned to both an area based program and multiple instant programs. A station can run in both an area based and an instant program; but it can only run in one area based program.
 - Problems

Mobile Apps and Web Links

- **Lynx Mobile** - a website
 - Works on Android or OIS
 - 6 users, all manual control, percent adjust and rainhold, no control of database and no map
 - It is the best way to start an entire program, vs the apps start individual stations.
- **NSN Connect** - a website
 - Works on Android or OIS or any computer
 - Only 1 user, 100% full control of all parts of central computer
- **Hand Held Radio App**
 - Works on Android or OIS
 - 6 users at a time

VIDEO Lynx Mobile


WEB LINK Lynx Mobile Link

VIDEO Lynx Hand Held Radio App

- Replaces the 2-way radio and communicates with central via internet, data is logged into course report because it goes through the central. Has a reference page of all commands and will put in the command for you. Uses a smart key pad so only available numbers are lit up.
- Cellular signal is stronger than 2-way radio for those difficult spots on the course.

- **Map App**

- Works on Android or OIS
- 6 users at a time
- Uses the map, has a “find me” button.

VIDEO  Lynx Map App

VIDEO  Lynx Map Creation Process

Manual control via the map. Records history and can name as favorites for future use.

- **GDC 2-Wire App**

- Works on Android or OIS
- 6 users at a time
- Can add a new decoder or replace an old one by taking a picture of the bar code and then hit replace or new. Automatically adds or replaces it in the control system in Lynx.
- Once wired up, hit “test” on the app to test the communication to the new decoder before burying it.
- All data is now logged automatically back to Lynx by just taking a picture of the barcode.

VIDEO  Lynx GDC Barcode App

Additional Notes

What's New in Lynx 6.0

- File Manager
 - New icons
 - Email / text notification button
 - Updates now check your version each time and open up and notify you in the bottom middle
 - MCI added for pumpstation communication
- Control System
 - The ability to turn off an entire satellite.
 - Added column for backnozzled, station flow will calculated automatically based off of back nozzle and the arc
- Preferences
 - Added a check box for Lynx Dash
- Status bar
 - Pumpstaion information box now contains both flow and pressure
- Utilities
 - Removed the purge screen as it is not needed to Purge in Lynx
- Projected flow
 - Updated show history to actually show history
 - By default it graphs by programs and all programs have a check in the box, you can the graph orientation if desired
- Alarms

- Different alarms for when it rains during irrigation in the evening, rainflow to account for rainfall, or weather alarm to place the system on rainhold.
- Email/text response available for all alarms
- Utilities
 - Added a tool to rename holes/areas – located in C:drive, ToroLynx, Tools, HoleNameAreaUtility
- NSN Sentry
 - Replacement for Connect Plus in Windows 7 to monitor if Lynx is on 3 times throughout the day, and you will be notified if it is not – whenever the central computer is turned off, at the time of begin new watering day, and at the time irrigation starts.

End of Document

Last edit 3-18-2018