



LifeMark® 100 Planning Operation

LimnTech Scientific, Inc.
215-703-5510





What Is a LifeMark[®] 100 system?

- The LifeMark[®] 100 system is a complete pavement marking layout location system
- It includes control systems to record where existing markings are located via GPS
- The raw data is processed by LimnTech
- The system is able to layout the new markings following the GPS recorded data

How will you use the LifeMark[®] 100?

- The LifeMark[®] 100 will assist you in managing your “follow the paver” work
- You will proactively plan work
- A full road plan will lead to more efficient scheduling



Dispatch Operation – old way

- Follow the Paver – short working time windows
- Pull Chain – two person minimum – 1 mile/hour
- Show up and wait.....
- Who? - Need skilled person for layout
- How ? - Drawings – missing information
- Why? - Paver finished late





Operation – New Way

- Choose roads to record
- Record roads when it fits your schedule, day or night, rain or shine
- Maintain full book of recorded roads for lots of flexibility
- As pavers pave roads and lanes, choose layout crew – LifeMark[®] 100 or manual crew,
- Perform layout with LifeMark[®] 100 in safety in less time, at 8 to 15 mph
- Stripe Road later with less skilled crew using LifeMark[®] 100 or 75



Getting Started in the office

- Create an Administrator Account for the Administration Page
- Create User accounts for the Administration Page
- Truck Management
- RTK Managements
- Create Proposed Path names in the office
- Checking Proposed Road Geography
- Reviewing Recorded Files
- Checking Recording Quality
- Staying Organized
- Archiving Files



Create an Administrator Account for the Administration Page

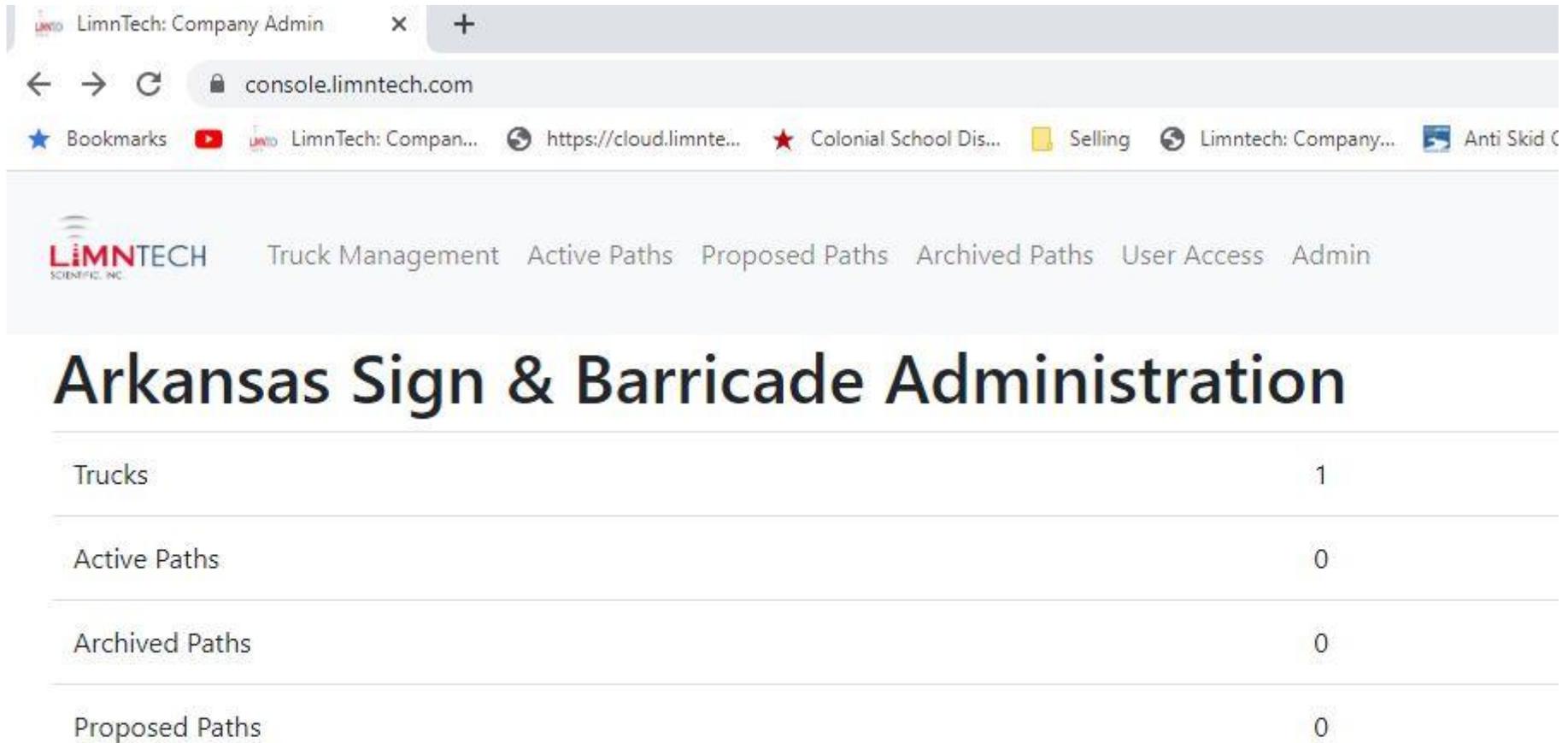
- Give LimnTech the email address of the person who will be your website administrator
- LimnTech will send an account creation email to that address
- That person will choose a password, and become the site administrator
- LimnTech can fix errors.
- Choose the password carefully



The Administrator

- The Administrator is the user who can do the most:
- Assign Paths to trucks
- Assign RTK to a truck
- View, Edit and archive paths
- Create and edit proposed Paths
- View, Edit Activate and Delete Archived Paths
- View, Create, Edit and Delete users

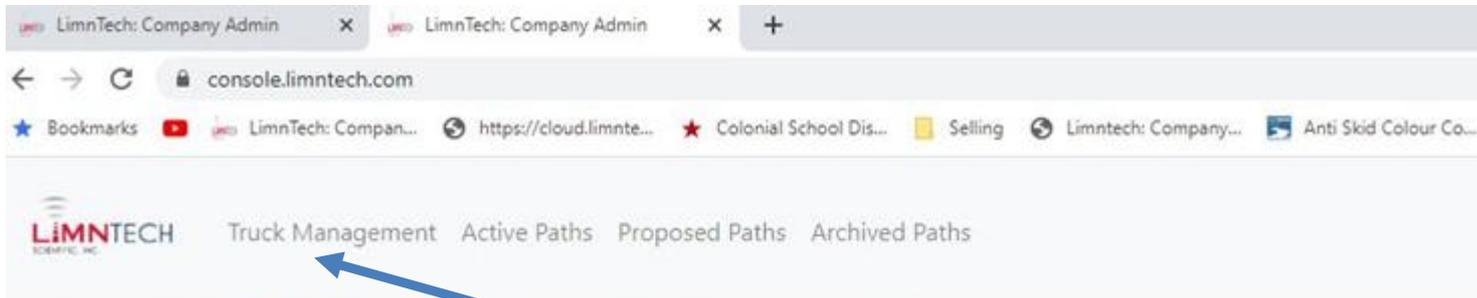
Admin Page Login



The screenshot shows a web browser window with the address bar at `console.limntech.com`. The page header includes the LimnTech logo and navigation links for Truck Management, Active Paths, Proposed Paths, Archived Paths, User Access, and Admin. The main content area is titled "Arkansas Sign & Barricade Administration" and contains a table with the following data:

Trucks	1
Active Paths	0
Archived Paths	0
Proposed Paths	0

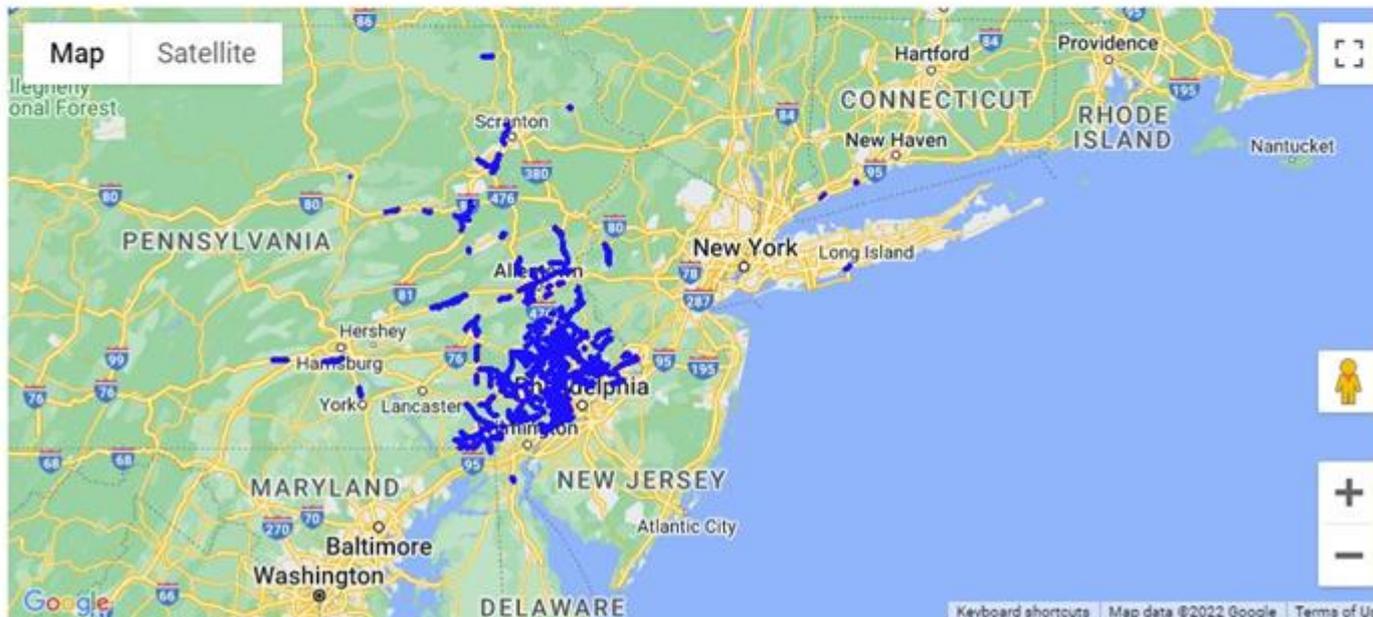
Main Page



Click Top bar to choose next steps

GUIDEMARK, INC. Administration

Trucks	8
Active Paths	220
Archived Paths	1392
Proposed Paths	85





Choosing RTK Service Provider

The RTK Service provider gives correction factors to your LifeMark system via cellphone or satellite.

You may have multiple RTK Service providers

Choose the one to suit your current System location on the Admin Page under Truck Management

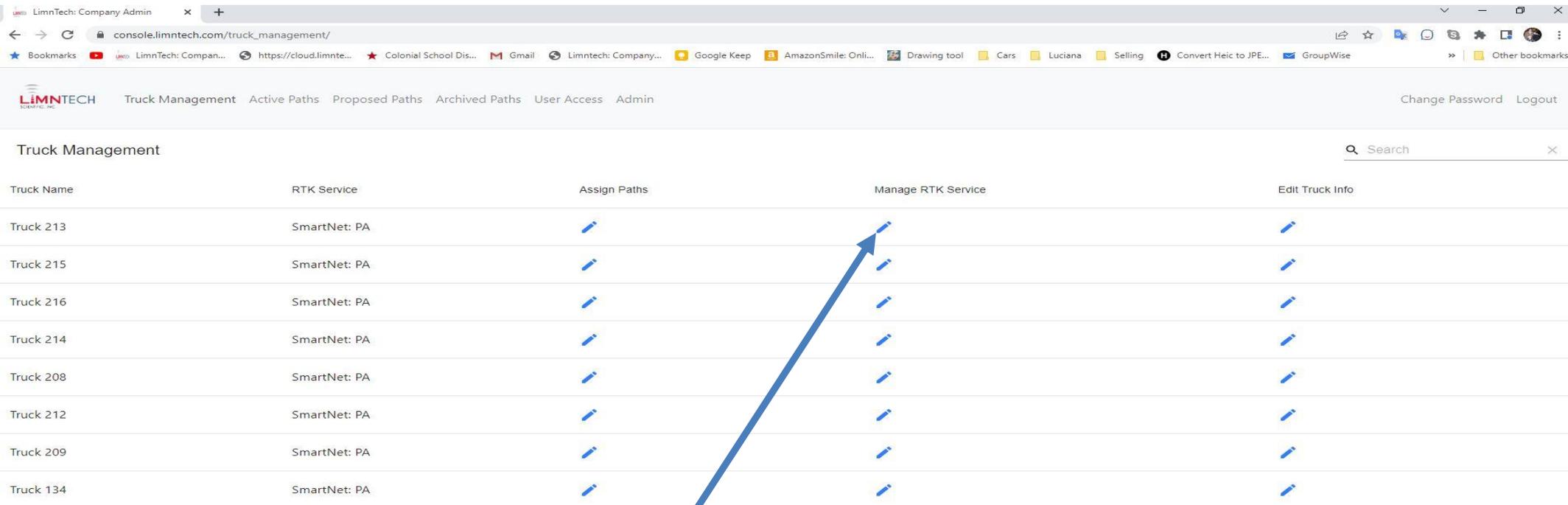
Truck Management

Truck Name	RTK Service	Assign Paths	Manage RTK Service	Edit Truck Info
Truck 213	SmartNet: PA			
Truck 215	SmartNet: PA			
Truck 216	SmartNet: PA			
Truck 214	SmartNet: PA			
Truck 208	SmartNet: PA			
Truck 212	SmartNet: PA			
Truck 209	SmartNet: PA			
Truck 134	SmartNet: PA			

- Current RTK Service Chosen Shown Here
- The truck management screen allows for changes to:
- Truck Name
- Assign Paths to truck
- Manage RTK Service

Click to choose
to make changes

Choosing RTK Service



The screenshot shows a web browser window with the URL `console.limntech.com/truck_management/`. The page title is "Truck Management" and it features a navigation menu with options like "Truck Management", "Active Paths", "Proposed Paths", "Archived Paths", "User Access", and "Admin". A search bar is located in the top right corner. The main content is a table with the following columns: "Truck Name", "RTK Service", "Assign Paths", "Manage RTK Service", and "Edit Truck Info". All trucks listed have "SmartNet: PA" as their RTK service. A blue arrow originates from a text box at the bottom left and points to the "Manage RTK Service" column.

Truck Name	RTK Service	Assign Paths	Manage RTK Service	Edit Truck Info
Truck 213	SmartNet: PA			
Truck 215	SmartNet: PA			
Truck 216	SmartNet: PA			
Truck 214	SmartNet: PA			
Truck 208	SmartNet: PA			
Truck 212	SmartNet: PA			
Truck 209	SmartNet: PA			
Truck 134	SmartNet: PA			

Click to change RTK

Choosing RTK Service

LimnTech: Company Admin x +

console.limntech.com/truck_management/ntrip/e631e451-8146-4068-8c2c-f3e5e252354e

Bookmarks LimnTech: Compan... https://cloud.limnte... Colonial School Dis... Gmail Limntech: Company... Google Keep AmazonSmile: Onli..

LiMNTech SCIENTIFIC, INC. Truck Management Active Paths Proposed Paths Archived Paths User Access Admin

Manage NTRIP Credentials: Truck 213

RTK Service	Region	Coverage Map	Active
SmartNet	PA		<input checked="" type="radio"/>

Save

Pick desired RTK service provider by clicking on button to make active here

Key Net RTK VA Service Area

Limtech: Company Admin | KeyNetGPS, A Trimble VRS Network | KeyNetGPS - Sensor Map | SmartNet North America - Portal

Not secure | vrs.keynetgps.com/Map/SensorMap.aspx

Apps | Bookmarks | Online Photo Editor... | Limtech: Company... | GroupWise (Chris D... | Amazon.com: Onlin... | Cars | Flickr: Your Photostr... | Colonial School Dis... | Cospheric - Supplie... | DreamBox Learning... | Quirkology - YouTu...



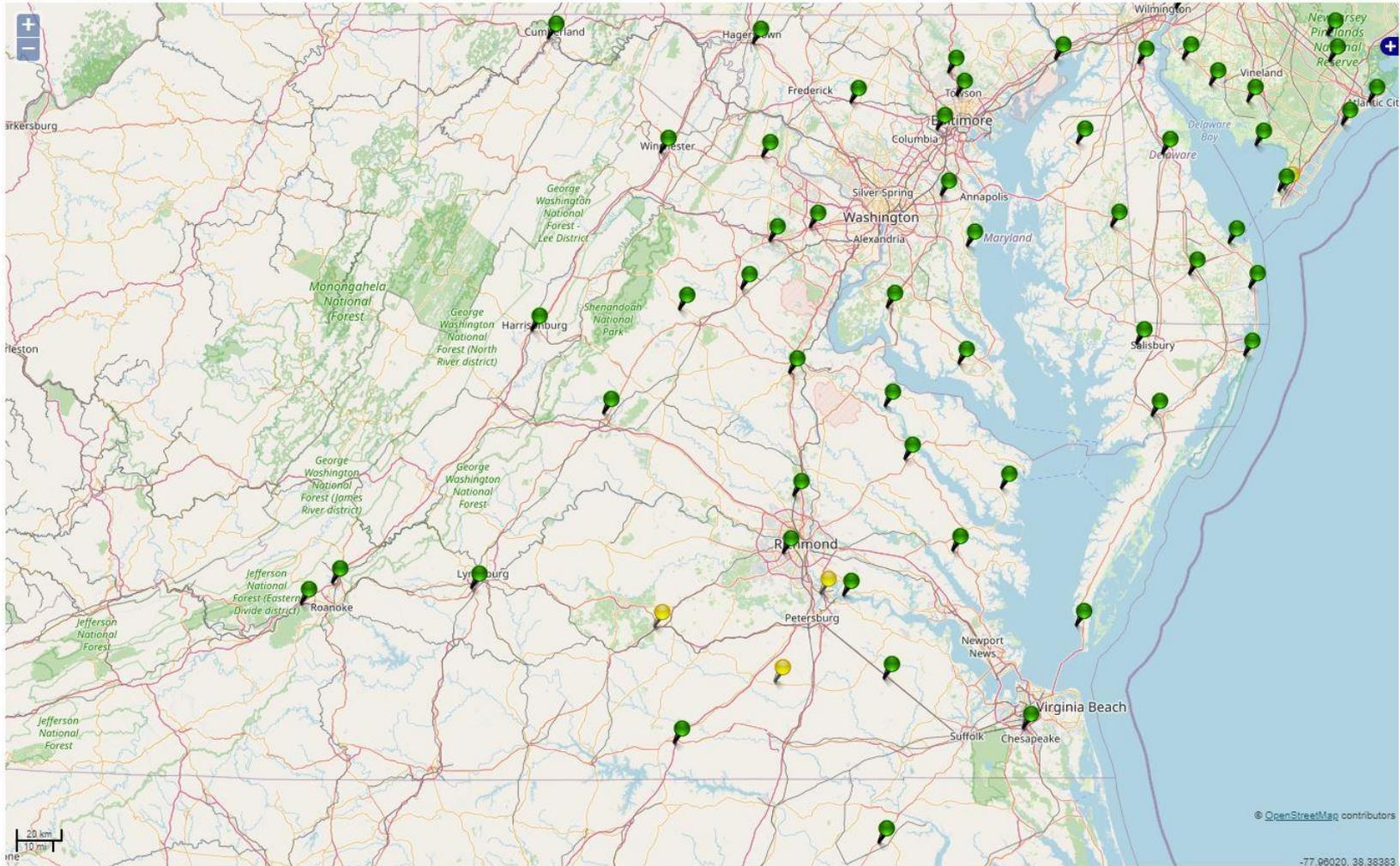
KeyNetGPS

Home > Sensor Map

- Home
- Sensor Map
- Login
- Register
- Documents
- Subscriber Agreement
- External Links
- Trimble



Sensor Map



237 sensors:

- DELVW
- DES1
- DEW1
- DEW4
- DEW5
- DEW6
- DEW7
- DKN1
- DNRC
- DP01
- DP02
- DP03
- DP04
- DP05
- DP06
- DP07
- DSS2
- EDU1
- ESPT
- ETF1
- EVS8
- EWV1
- FE01
- FJS1
- FOR1
- FTML
- GaF2
- GB01
- GEOR
- GLRA
- GRFL
- GTE1
- GTU1
- HAMP
- HB10
- HB13
- HB14
- HB15
- HB16
- HB1B
- HB4B
- HB5B
- HKG1
- HKG2
- HOB2
- HOB3
- HOB7

SmartNet RTK Service Area VA

The screenshot displays the SmartNet North America website interface. At the top, the browser tab reads "SmartNet North America - Portal" and the address bar shows "/coverage_network.cfm". The website header includes the SmartNet North America logo with the tagline "Any Constellation - Any Application - Open to All" and a "Login" button. A navigation menu contains links for "HOME", "OUR SERVICES", "HOW IT WORKS", "NETWORK COVERAGE", and "SUBSCRIBE".

The main content area features a map of the Eastern United States, with a large red-shaded region indicating the RTK service area. This area covers parts of West Virginia, Virginia, Maryland, Delaware, and New Jersey. The map includes labels for various cities and states, such as Philadelphia, Baltimore, Washington, Richmond, and Virginia Beach. A "Map" and "Satellite" toggle is visible in the top left of the map area, and a "Google" logo is in the bottom left. A scale bar and "Map data ©2020 Google, INEGI" are located in the bottom right corner.



Create User accounts for the Administration Page

- Your Administrator will create user accounts for your Administration page
- Users can:
 - Assign and RTK to a truck
 - View Active Paths
 - View Proposed Paths
 - View Archived Paths

Users



User Access

search 

First Name ↓	Last Name	Username	Privilege	Edit	Delete
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Create Proposed Path names in the office

- In the office you can pre-load file names to make things easier and more accurate for the field people operating the truck
- Decide on your naming key system
- Examples:
- State-County-City-Road-Direction-Lane line-
- PA-Montgomery-Hatboro-Main St- NB-YCL
- Job 12345 Alex County Hiway 35 NB REL

Proposed Paths

Path name contains:

Search

Path Name	Description	Date Created	Edit	Delete
RTK Test PM-7B-20 Rt 29 PG 1		Nov. 16, 2020, 3:33 p.m.		
RTK Test PM-7B-20 Rt 29 PG 3		Nov. 16, 2020, 3:32 p.m.		
RTK Test LM-9B-20 RT 695 Kirby Pg 6		Nov. 16, 2020, 3:16 p.m.		
RTK Test LM-9B-20 RT 703 Shreve Rd Pg 8		Nov. 16, 2020, 3:14 p.m.		
RTK Test LM-9B-20 RT 760 Brook Rd Pg 11		Nov. 16, 2020, 3:13 p.m.		
RTK Test LM-9B-20 RT 6928 Fairview Park PG 13		Nov. 16, 2020, 3:12 p.m.		
RTK Test PM-7C-20 Fauquier Co Rt 601 PG 9		Nov. 16, 2020, 3:10 p.m.		
RTK Test LM-9B-20 RT 6928 Fairview Park PG 12		Nov. 16, 2020, 2:52 p.m.		
RTK Test PM-7C-20 Fauquier Co Rt 55 Both PG 6		Nov. 16, 2020, 2:49 p.m.		
RTK Test PM-7C-20 Fauquier Co Rt 55 Both PG 3		Nov. 16, 2020, 2:48 p.m.		
RTK Test PM-7C-20 Fauquier Co Rt 55 Both PG 2		Nov. 16, 2020, 2:47 p.m.		
PM-7G-20 Culpeper Co Rt 667 Both	Page 13 of 14 Nalles Mill Rd	July 22, 2020, 1:21 p.m.		



Checking Proposed Road Geography

- Before you send a crew out to record, review the Road in Google maps or Earth to look for possible issues
- LifeMark-100 depends on cell phone service and GPS/RTK service
- If the location will not have any of the services, recording capability will be compromised.
- Tunnels, valleys, Tree or Building tunnels



Reviewing Recorded Files

- The office or field teams can review recorded files once the field team has synchronized
- This can assist planning to fix errors before the field team leaves the site
- Examples are the wrong road or marking is recorded
- The topography (trees or buildings) suggest recording in the opposite direction might yield better results
-



Checking Recording Quality

- Recording quality can vary
- Gaps in the red path line indicate a need to layout by hand
- Check gap lengths and curves
- Can the layout driver drive through the gap?
- If not plan for hand layout crew and time



Staying Organized

- Old completed jobs can have files archived
- Files names can be changed in the office
- The office can add descriptive information into the description – example start at McDonalds

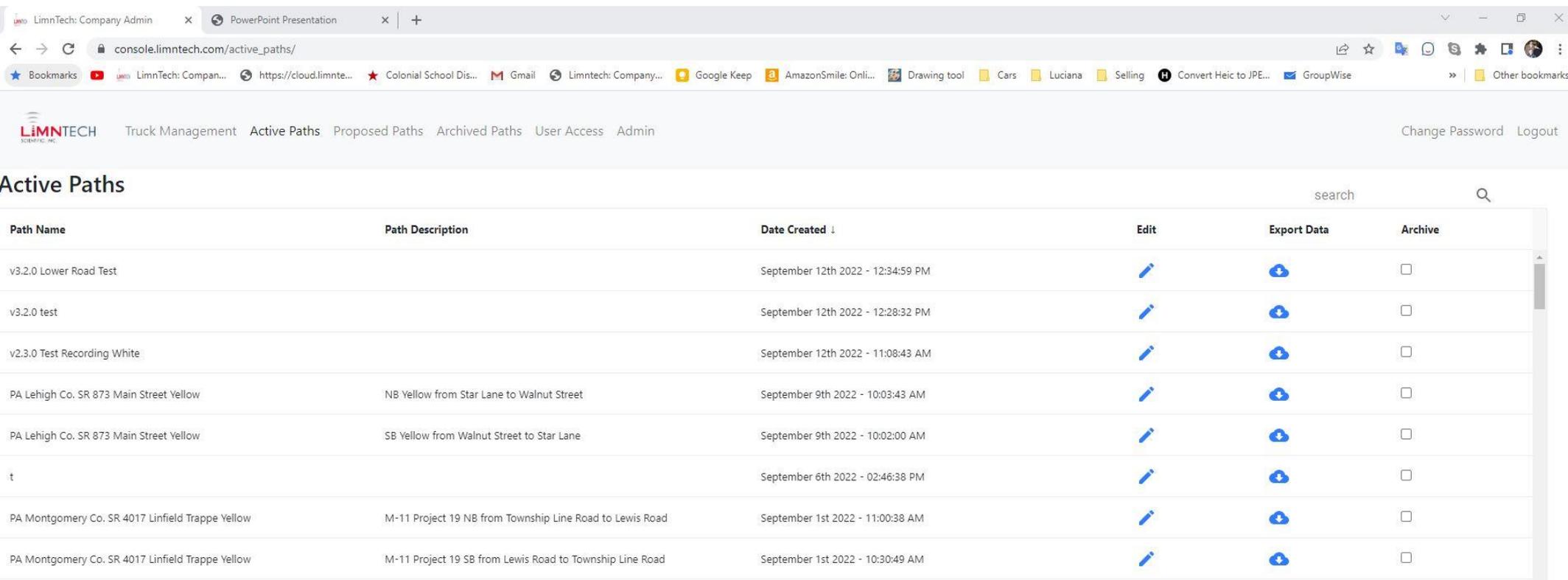
Active Paths

Sort by Date or Name

Choose Edit to edit

Click Archive Box to Archive

Click Export to Export CSV file of data



LimnTech: Company Admin | PowerPoint Presentation | console.limntech.com/active_paths/

Bookmarks | LimnTech: Compan... | https://cloud.limnte... | Colonial School Dis... | Gmail | Limntech: Company... | Google Keep | AmazonSmile: Onli... | Drawing tool | Cars | Luciana | Selling | Convert Heic to JPE... | GroupWise | Other bookmarks

LIMNTECH SCIENTIFIC INC. | Truck Management | **Active Paths** | Proposed Paths | Archived Paths | User Access | Admin | Change Password | Logout

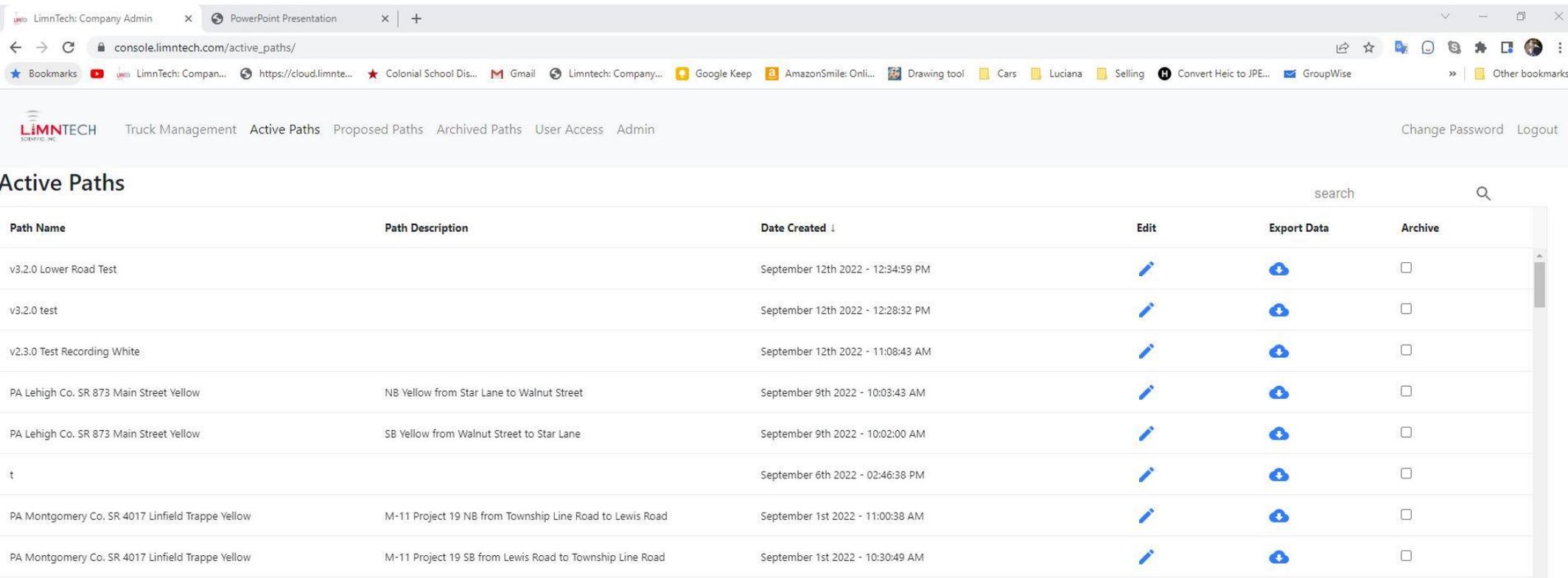
Active Paths

search

Path Name	Path Description	Date Created ↓	Edit	Export Data	Archive
v3.2.0 Lower Road Test		September 12th 2022 - 12:34:59 PM			<input type="checkbox"/>
v3.2.0 test		September 12th 2022 - 12:28:32 PM			<input type="checkbox"/>
v2.3.0 Test Recording White		September 12th 2022 - 11:08:43 AM			<input type="checkbox"/>
PA Lehigh Co. SR 873 Main Street Yellow	NB Yellow from Star Lane to Walnut Street	September 9th 2022 - 10:03:43 AM			<input type="checkbox"/>
PA Lehigh Co. SR 873 Main Street Yellow	SB Yellow from Walnut Street to Star Lane	September 9th 2022 - 10:02:00 AM			<input type="checkbox"/>
t		September 6th 2022 - 02:46:38 PM			<input type="checkbox"/>
PA Montgomery Co. SR 4017 Linfield Trappe Yellow	M-11 Project 19 NB from Township Line Road to Lewis Road	September 1st 2022 - 11:00:38 AM			<input type="checkbox"/>
PA Montgomery Co. SR 4017 Linfield Trappe Yellow	M-11 Project 19 SB from Lewis Road to Township Line Road	September 1st 2022 - 10:30:49 AM			<input type="checkbox"/>

Archiving Files

- In the Edit page, click on files to move them to Archive

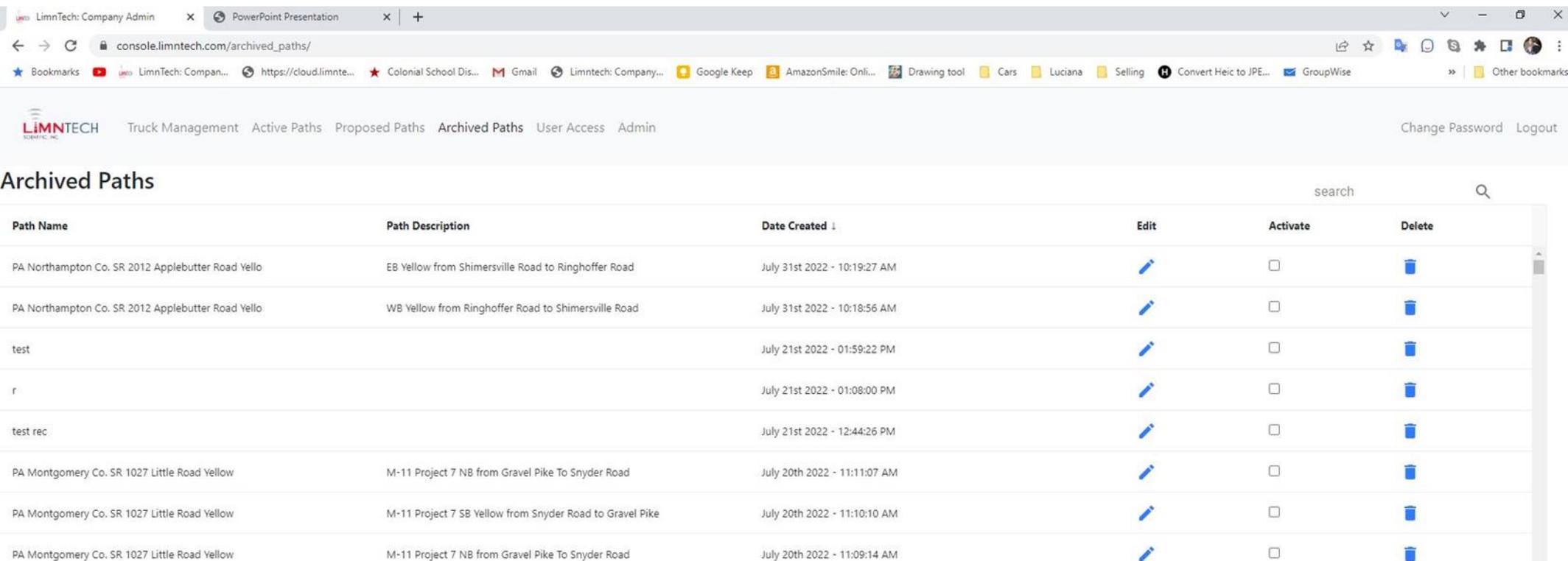


The screenshot shows a web browser window with the URL `console.limntech.com/active_paths/`. The page title is "Active Paths" and it includes a search bar. The table below lists the active paths.

Path Name	Path Description	Date Created ↓	Edit	Export Data	Archive
v3.2.0 Lower Road Test		September 12th 2022 - 12:34:59 PM			<input type="checkbox"/>
v3.2.0 test		September 12th 2022 - 12:28:32 PM			<input type="checkbox"/>
v2.3.0 Test Recording White		September 12th 2022 - 11:08:43 AM			<input type="checkbox"/>
PA Lehigh Co. SR 873 Main Street Yellow	NB Yellow from Star Lane to Walnut Street	September 9th 2022 - 10:03:43 AM			<input type="checkbox"/>
PA Lehigh Co. SR 873 Main Street Yellow	SB Yellow from Walnut Street to Star Lane	September 9th 2022 - 10:02:00 AM			<input type="checkbox"/>
t		September 6th 2022 - 02:46:38 PM			<input type="checkbox"/>
PA Montgomery Co. SR 4017 Linfield Trappe Yellow	M-11 Project 19 NB from Township Line Road to Lewis Road	September 1st 2022 - 11:00:38 AM			<input type="checkbox"/>
PA Montgomery Co. SR 4017 Linfield Trappe Yellow	M-11 Project 19 SB from Lewis Road to Township Line Road	September 1st 2022 - 10:30:49 AM			<input type="checkbox"/>

Archiving Files

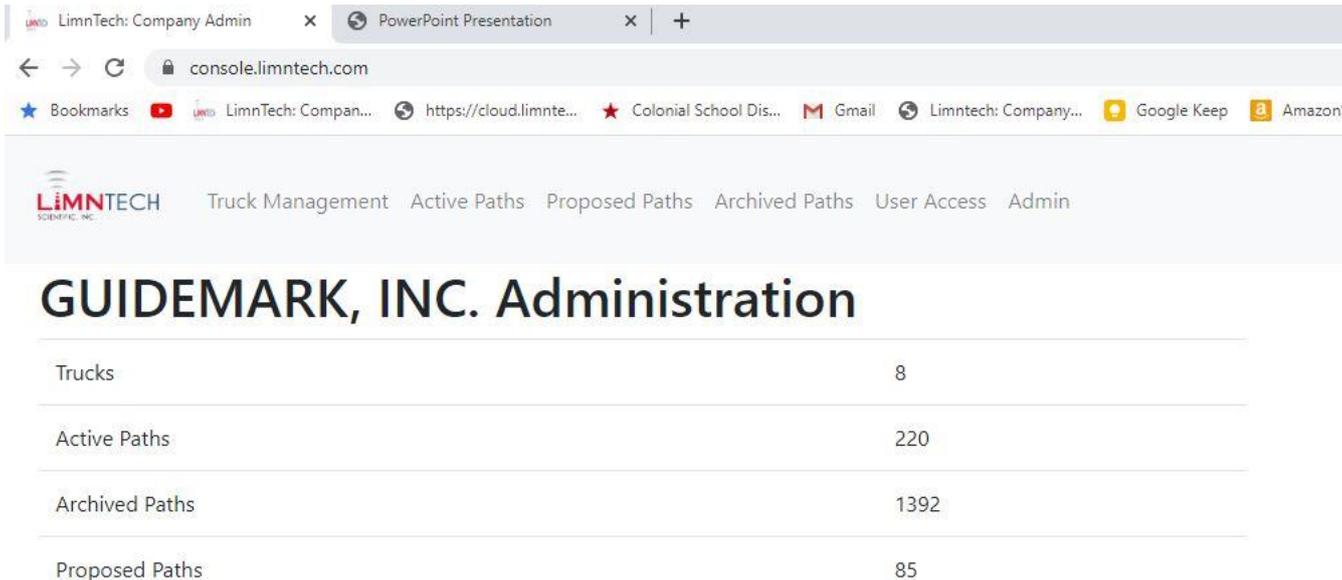
Choose Activate to send Archived files back to Main



The screenshot shows a web browser window with the URL `console.limntech.com/archived_paths/`. The page title is "Archived Paths" and it includes a search bar. The table below lists several archived paths with columns for Path Name, Path Description, Date Created, Edit, Activate, and Delete.

Path Name	Path Description	Date Created ↓	Edit	Activate	Delete
PA Northampton Co. SR 2012 Applebutter Road Yello	EB Yellow from Shimersville Road to Ringhoffer Road	July 31st 2022 - 10:19:27 AM		<input type="checkbox"/>	
PA Northampton Co. SR 2012 Applebutter Road Yello	WB Yellow from Ringhoffer Road to Shimersville Road	July 31st 2022 - 10:18:56 AM		<input type="checkbox"/>	
test		July 21st 2022 - 01:59:22 PM		<input type="checkbox"/>	
r		July 21st 2022 - 01:08:00 PM		<input type="checkbox"/>	
test rec		July 21st 2022 - 12:44:26 PM		<input type="checkbox"/>	
PA Montgomery Co. SR 1027 Little Road Yellow	M-11 Project 7 NB from Gravel Pike To Snyder Road	July 20th 2022 - 11:11:07 AM		<input type="checkbox"/>	
PA Montgomery Co. SR 1027 Little Road Yellow	M-11 Project 7 SB Yellow from Snyder Road to Gravel Pike	July 20th 2022 - 11:10:10 AM		<input type="checkbox"/>	
PA Montgomery Co. SR 1027 Little Road Yellow	M-11 Project 7 NB from Gravel Pike To Snyder Road	July 20th 2022 - 11:09:14 AM		<input type="checkbox"/>	

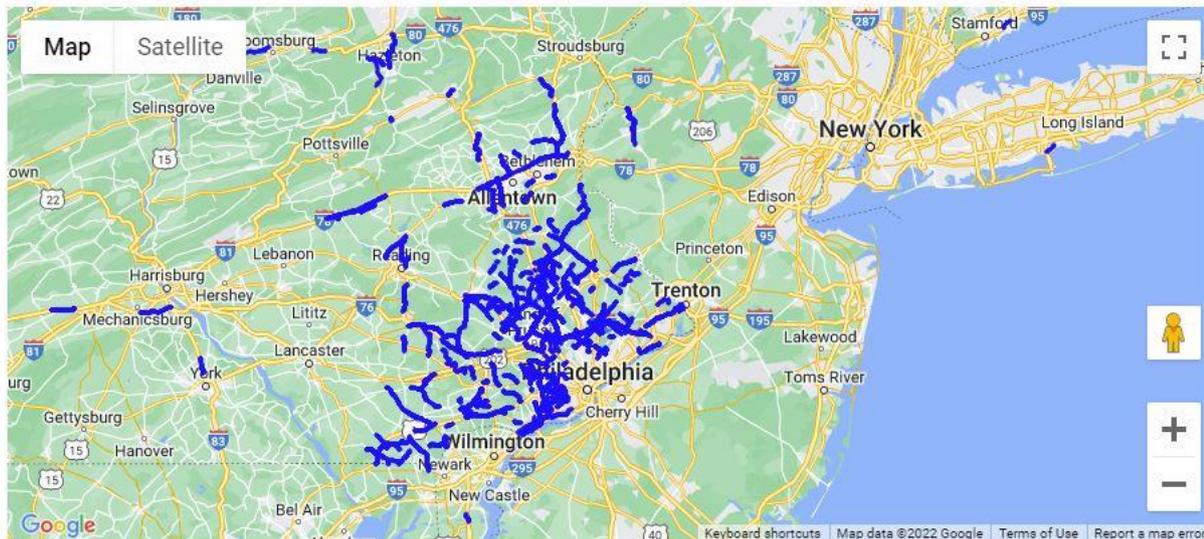
LimnTech Administration Screens will allow for work planning in the office



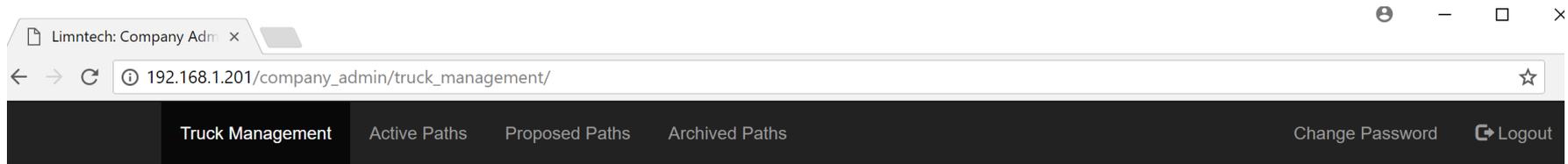
The screenshot shows a web browser window with the URL `console.limntech.com`. The page title is "GUIDEMARK, INC. Administration". Below the title is a table with the following data:

Trucks	8
Active Paths	220
Archived Paths	1392
Proposed Paths	85

View completed recorded roads in a Map format
Admin Page is visible on cellphones or tablets that have Internet access in field



Truck Management

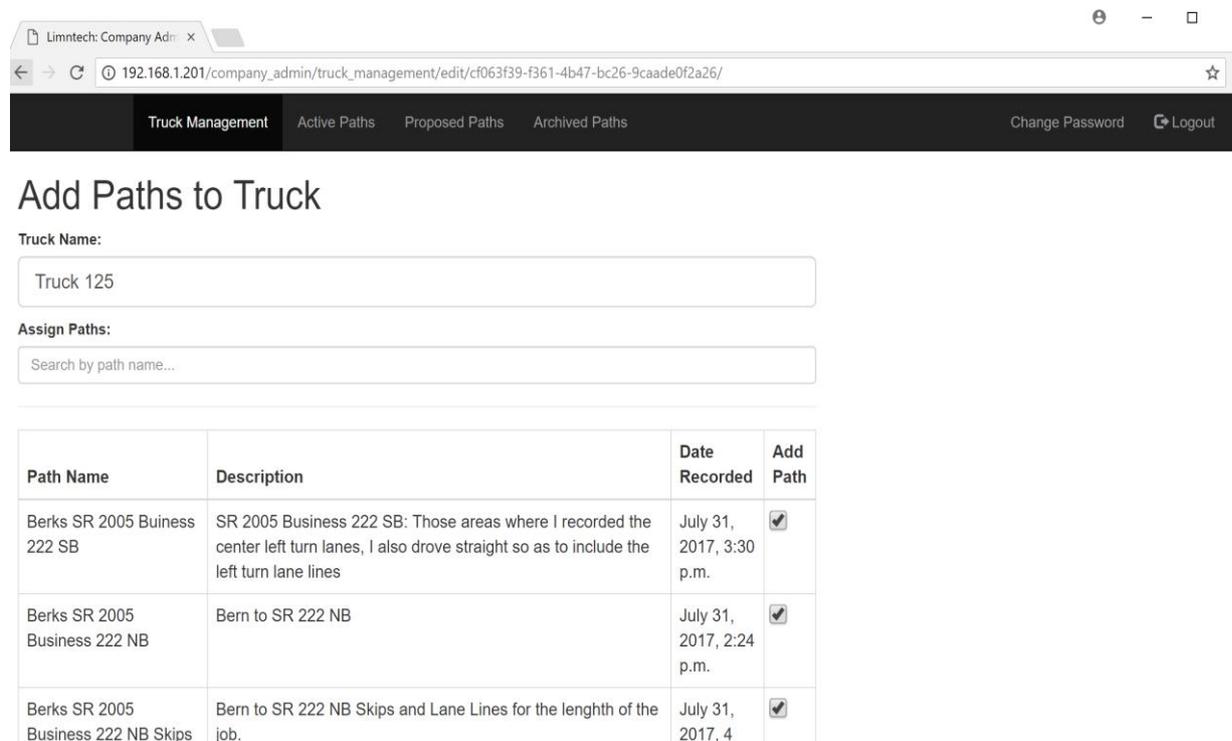


Truck Management

Truck Name	Edit
Truck 125	
Truck 149	

Manage multiple trucks from the office

Loading Recorded Roads onto each truck

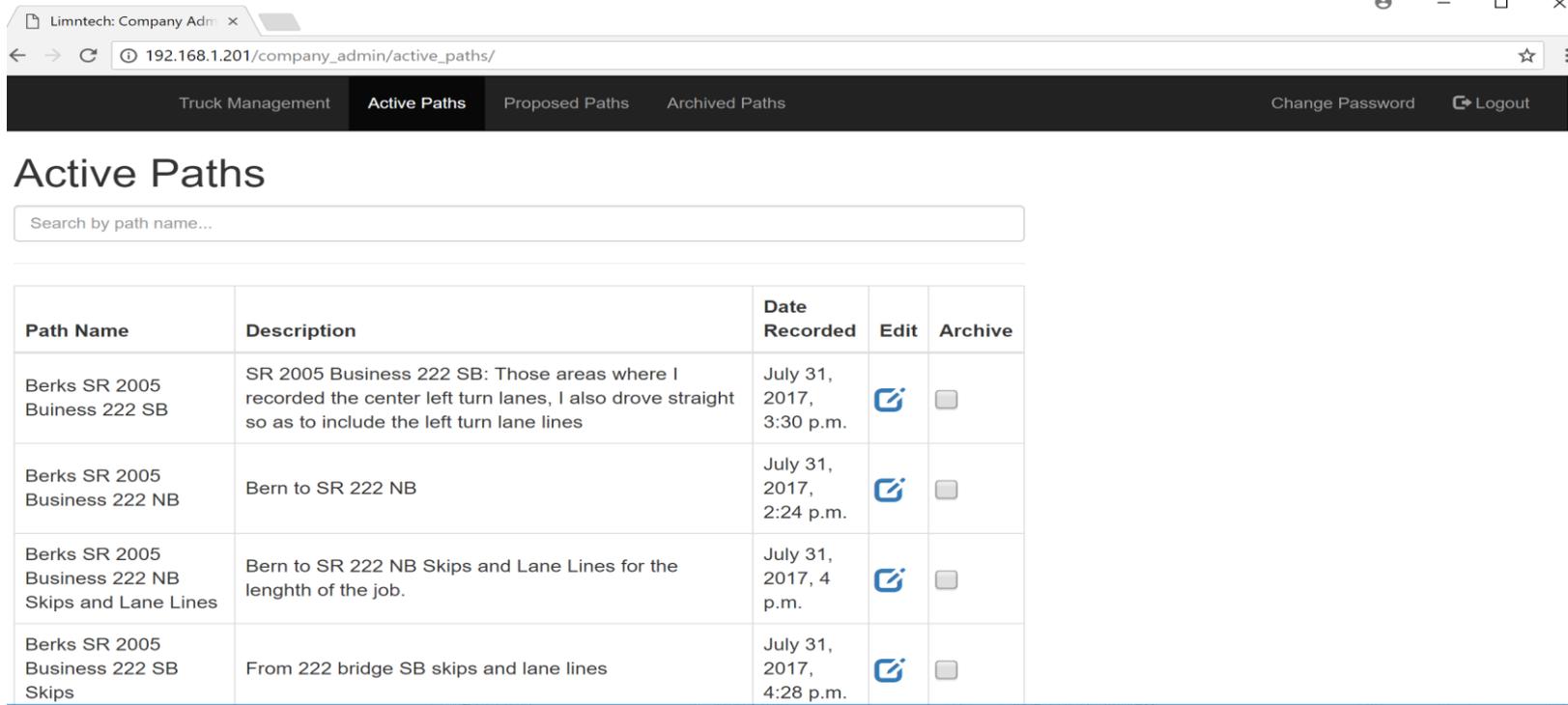


The screenshot shows a web browser window with the URL `192.168.1.201/company_admin/truck_management/edit/cf063f39-f361-4b47-bc26-9caade0f2a26/`. The page title is "Add Paths to Truck". The "Truck Name" field contains "Truck 125". The "Assign Paths" section has a search input field with the placeholder "Search by path name...". Below this is a table with three columns: "Path Name", "Description", "Date Recorded", and "Add Path".

Path Name	Description	Date Recorded	Add Path
Berks SR 2005 Business 222 SB	SR 2005 Business 222 SB: Those areas where I recorded the center left turn lanes, I also drove straight so as to include the left turn lane lines	July 31, 2017, 3:30 p.m.	<input checked="" type="checkbox"/>
Berks SR 2005 Business 222 NB	Bern to SR 222 NB	July 31, 2017, 2:24 p.m.	<input checked="" type="checkbox"/>
Berks SR 2005 Business 222 NB Skips	Bern to SR 222 NB Skips and Lane Lines for the length of the job.	July 31, 2017, 4	<input checked="" type="checkbox"/>

Manage what the field team sees on the truck display to keep it simple for them

List of Recorded Roads and paths

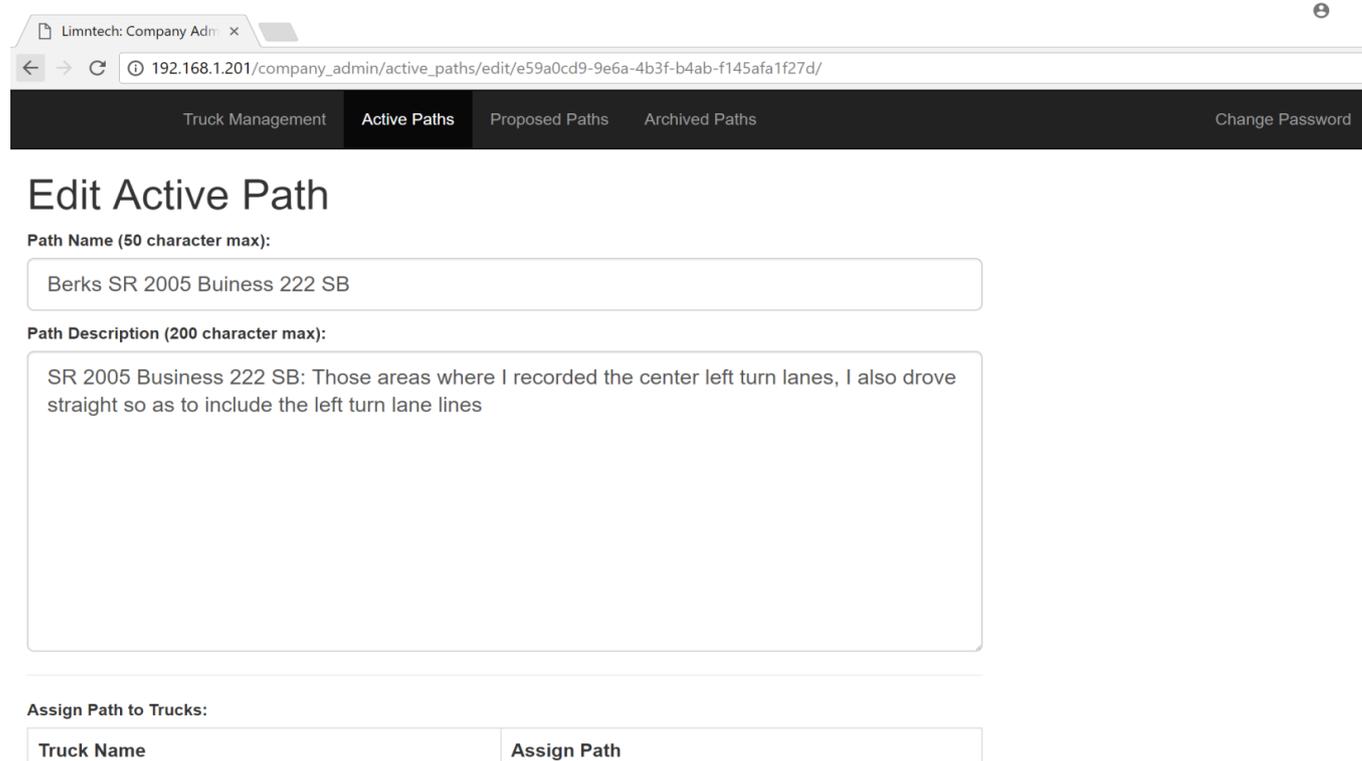


Search by path name...

Path Name	Description	Date Recorded	Edit	Archive
Berks SR 2005 Business 222 SB	SR 2005 Business 222 SB: Those areas where I recorded the center left turn lanes, I also drove straight so as to include the left turn lane lines	July 31, 2017, 3:30 p.m.		<input type="checkbox"/>
Berks SR 2005 Business 222 NB	Bern to SR 222 NB	July 31, 2017, 2:24 p.m.		<input type="checkbox"/>
Berks SR 2005 Business 222 NB Skips and Lane Lines	Bern to SR 222 NB Skips and Lane Lines for the length of the job.	July 31, 2017, 4 p.m.		<input type="checkbox"/>
Berks SR 2005 Business 222 SB Skips	From 222 bridge SB skips and lane lines	July 31, 2017, 4:28 p.m.		<input type="checkbox"/>

Office Personnel can view the lists of completed recordings after truck synchronizes

Editing the name of a recorded road is possible by the office



The screenshot shows a web browser window with the address bar displaying the URL: 192.168.1.201/company_admin/active_paths/edit/e59a0cd9-9e6a-4b3f-b4ab-f145afa1f27d/. The browser tab is titled "Limntech: Company Admin". The page has a dark navigation bar with the following items: "Truck Management", "Active Paths" (which is highlighted), "Proposed Paths", "Archived Paths", and "Change Password".

Edit Active Path

Path Name (50 character max):

Path Description (200 character max):

Assign Path to Trucks:

Truck Name	Assign Path
------------	-------------

Editing in the office allows for simple error corrections. Seeing the map recorded makes it accurate.

Choosing the truck to assign road to

The screenshot shows a web browser window with the address bar displaying `192.168.1.201/company_admin/active_paths/edit/e59a0cd9-9e6a-4b3f-b4ab-f145afa1f27d/`. The page has a dark navigation bar with the following items: [Truck Management](#), [Active Paths](#) (selected), [Proposed Paths](#), [Archived Paths](#), and [Change Password](#). The main content area is titled "Edit Active Path" and contains the following sections:

Path Name (50 character max):
A text input field containing the value "Berks SR 2005 Buiness 222 SB".

Path Description (200 character max):
A text area containing the text: "SR 2005 Business 222 SB: Those areas where I recorded the center left turn lanes, I also drove straight so as to include the left turn lane lines".

Assign Path to Trucks:
A table with two columns: "Truck Name" and "Assign Path".

Truck Name	Assign Path
------------	-------------

Choosing the truck

Assign Path to Trucks:

Truck Name	Assign Path
Truck 125	<input checked="" type="checkbox"/>
Truck 149	<input checked="" type="checkbox"/>

Select All

Deselect All

Save

Path Overlay:





Viewing Recorded Map Files

This allows management to view roads recorded and layout requirements to plan properly.

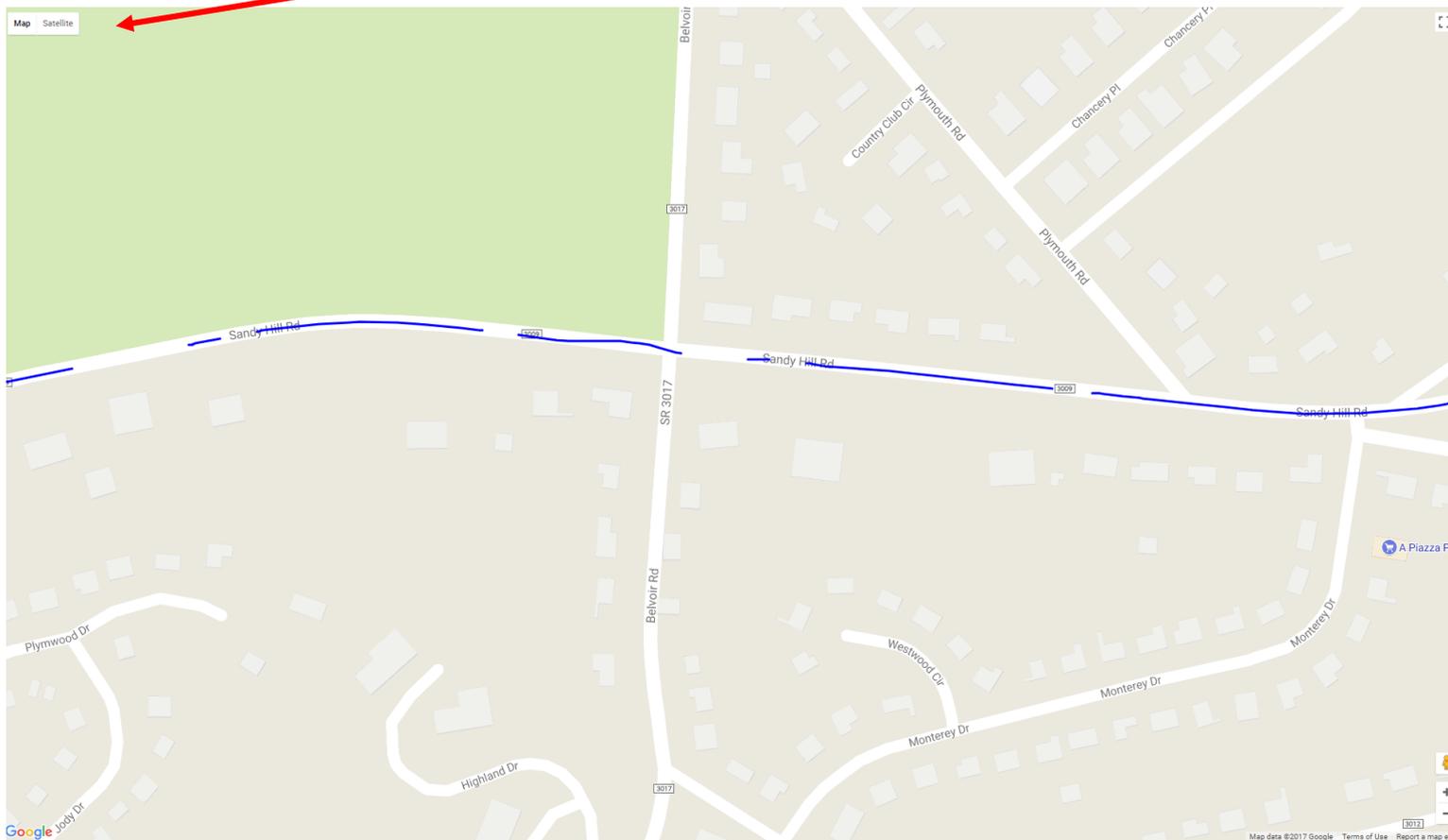
Poorly or incorrectly recorded roads can be viewed in the office.

If a hand layout crew is needed, you can know in advance.

Viewing Recorded Map Files

Default View

To switch from Map View to Google Satellite, click on the box in the upper left hand corner



This Brings Up The Angle Satellite View In Google



Click Here To Toggle Top View

Google Satellite Top View Looks Closer To Actual Path

- Note how the Turn Lane appears more correct in top view than in Angle View



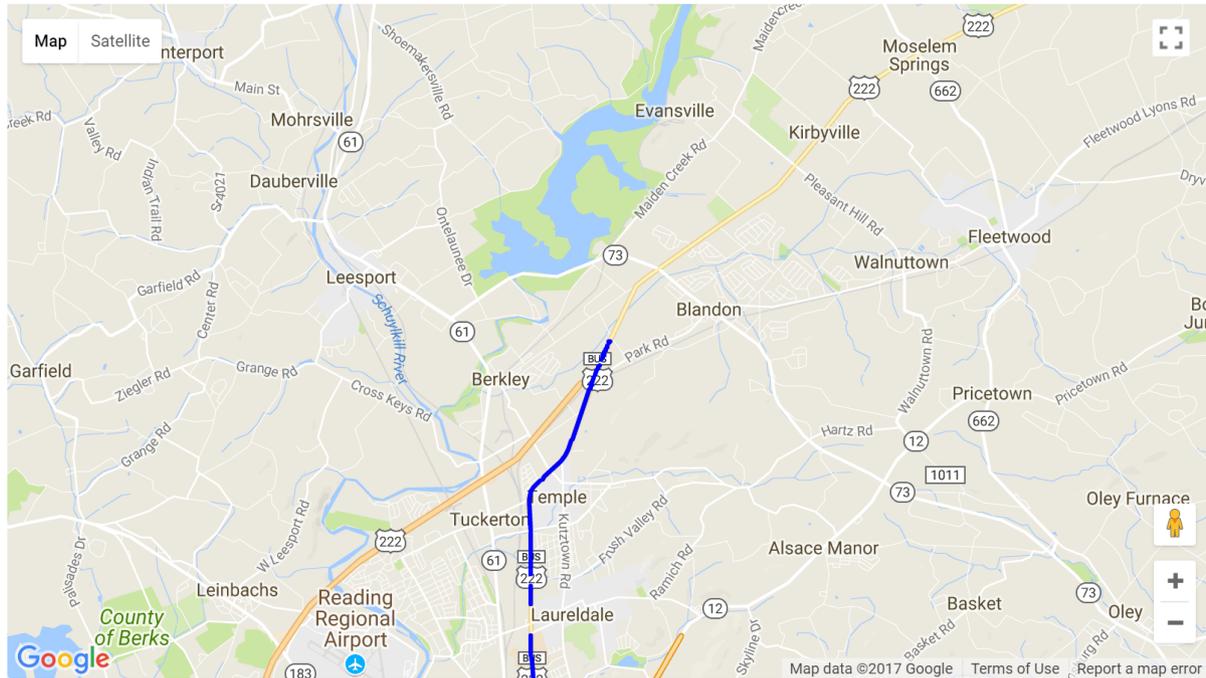
The Road Chosen – Map overlay

Select All

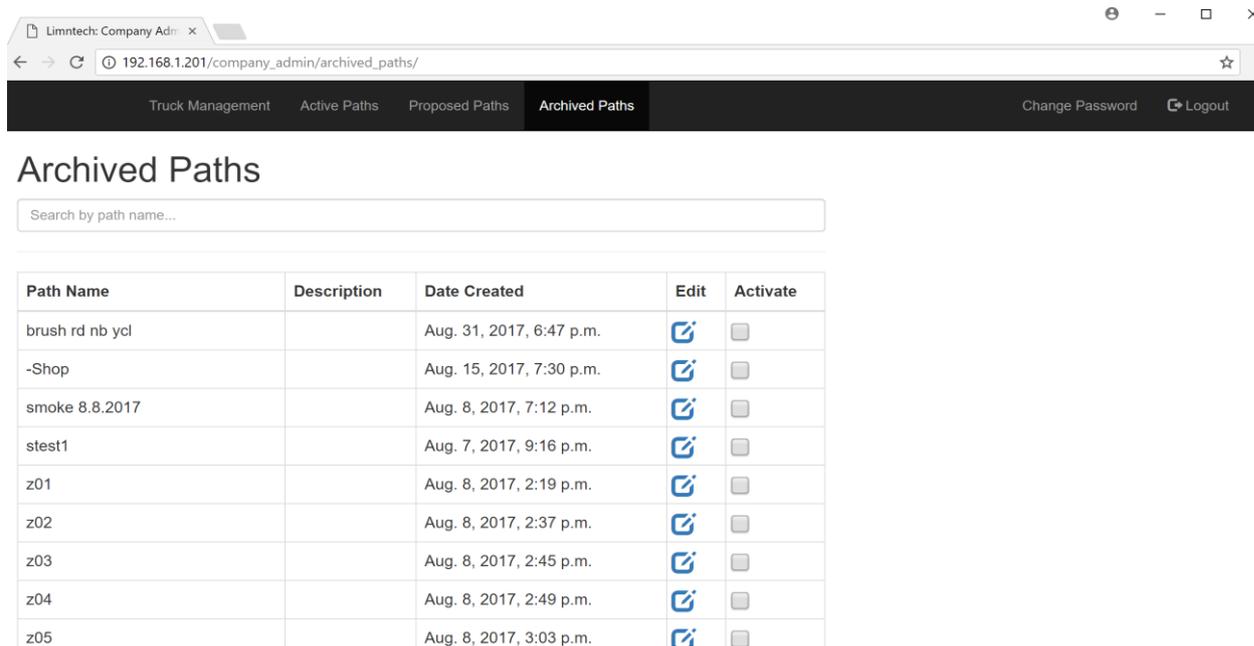
Deselect All

Save

Path Overlay:



Old Paths To Keep But Not On Trucks



Limtech: Company Admin x

192.168.1.201/company_admin/archived_paths/

Truck Management Active Paths Proposed Paths **Archived Paths** Change Password Logout

Archived Paths

Search by path name...

Path Name	Description	Date Created	Edit	Activate
brush rd nb ycl		Aug. 31, 2017, 6:47 p.m.		<input type="checkbox"/>
-Shop		Aug. 15, 2017, 7:30 p.m.		<input type="checkbox"/>
smoke 8.8.2017		Aug. 8, 2017, 7:12 p.m.		<input type="checkbox"/>
stest1		Aug. 7, 2017, 9:16 p.m.		<input type="checkbox"/>
z01		Aug. 8, 2017, 2:19 p.m.		<input type="checkbox"/>
z02		Aug. 8, 2017, 2:37 p.m.		<input type="checkbox"/>
z03		Aug. 8, 2017, 2:45 p.m.		<input type="checkbox"/>
z04		Aug. 8, 2017, 2:49 p.m.		<input type="checkbox"/>
z05		Aug. 8, 2017, 3:03 p.m.		<input type="checkbox"/>

After a road is restriped or a project completed, the recorded paths can be archived to be used later.