

**MEMORANDUM OF UNDERSTANDING  
RELATIVE TO PURCHASE OF  
NP&G INNOVATIONS, INC.'S INTELLECTUAL PROPERTY**

**THIS MEMORANDUM OF UNDERSTANDING (“MOU”) is  
made as of this 25<sup>th</sup> day of July, 2020,**

**BY AND BETWEEN**

HSR Technologies, Inc., a Wyoming Corporation (“Buyer”) of which Ameri Metro, Inc., a Delaware corporation (“Ameri Metro”), is a 25% shareholder,

**AND**

NP&G Innovations, Inc., a New York corporation (“Seller”)

NP&G Innovations, Inc. and The Company shall be hereinafter together referred to as “**PARTIES**”, and individually as “**PARTY**”.

**WHEREAS:**

Upon the execution of this **MEMORANDUM OF UNDERSTANDING RELATIVE TO** the purchase of NP&G Innovations, Inc.’s Intellectual Property, it is the intent of the parties to effectuate the acquisition contemplated hereby.

1. Purchase of the Property. Buyer will purchase from Seller, free and clear of liens, encumbrances and rights of others, all of the intellectual property (the “Property”) contained in United States Patent No. 7,931,210 (the “Patent”), whether or not related to rail ties/sleepers, and any other inventions and discoveries available to Seller necessary for the exploitation of the Patent. “Property” includes, whether or not related to rail ties/sleepers, all copyrights and trademarks related to the Patent, as well as derivatives, imitations, adaptations, reproductions and exploitations owned by Seller (including, but not limited to U.S. Patent Application No. 13092550), and all confidential information, trade secrets, industry contacts and goodwill associated with the Patent.

2. Purchase Price. Buyer will pay for the Property by delivering to Seller at the closing 7,500 shares of Ameri Metro Class B Common Stock (the “AM Class B Stock”) with value of \$3,100.00 USD per share and 10,000 shares of Ameri Metro Class C Common Stock (the “AM Class C Stock”) with value of \$60.00 USD per share, collectively the AM Class B Stock and the AM Class C Stock may hereinafter be referred to as the “AM Stock”). The collective combined purchase price is \$23,850,000.00 USD.

3. Consulting Agreements. If desired by Buyer, Calvin Nichols, James Pike and Lucian Gilbert (each a “Principal Owner” and collectively the “Principal Owners”) shall enter into Consulting Agreements with Buyer to provide services to Buyer post-closing relating to the Property on terms mutually agreeable to Buyer, Seller and each Principal Owner.

4. Noncompetition/Non-solicitation Agreement. The definitive Sale Agreement and each definitive Consulting Agreement shall contain noncompetition and non-solicitation provisions as mutually agreed upon by Seller, Buyer and each such Principal Owner.

5. Property Sale Agreement. The definitive Sale Agreement to effectuate the sale and acquisition of the Property shall contain, among other things, such representations, warranties, conditions precedent, covenants, indemnities, and other terms and conditions customary in acquisition agreements for transactions of this type as mutually agreed to by Buyer and Seller; provided, however, the representations and warranties shall be limited to those reasonably necessary to ensure each party is receiving the agreed upon consideration from the other party free and clear of all liens, encumbrances and rights of others.

6. Timing. The sale and purchase of the Intellectual Property shall close on or before December 31, 2020. If not closed by December 31, 2020, the definitive Sale Agreement shall automatically terminate.

7. License of the Property Pending Closing. Upon the execution of this MEMORANDUM OF UNDERSTANDING, Seller hereby grants to Buyer an exclusive, worldwide, royalty-free license to exploit the Property during the period from the date hereof until the earlier of (i) the closing of the sale and purchase of the Property pursuant to the definitive Sale Agreement and (ii) December 31, 2020, upon which date the license will terminate.

8. Expenses. Each party shall pay their own expenses and costs incidental to completion of the sale and acquisition of the Property (including legal and accounting fees).

9. Exclusive Dealing. Seller agrees that from the date of acceptance of this MEMORANDUM OF UNDERSTANDING by Buyer until September 30, 2020, Seller (a) will not sell any of the Property to any other person or entity, (b) will not negotiate or accept any agreement for the sale of all or any part of the Property with any third party and (c) will notify Buyer of any unsolicited offers to purchase all or any part of the Property; provided, however, if this MEMORANDUM OF UNDERSTANDING is terminated pursuant to Section 10 hereof prior to September 30, 2020, then Seller shall no longer be bound this Section 9.

10. Termination. This MEMORANDUM OF UNDERSTANDING may be terminated: (i) by the mutual agreement of the parties, or (ii) by either party if the parties fail to enter into a definitive Sale Agreement on or prior to September 30, 2020. Upon the termination of this MEMORANDUM OF UNDERSTANDING, all of the parties' obligations will terminate without any obligation of any of the parties except as set forth in Section 11 hereof.

11. Nonbinding Agreement. This MEMORANDUM OF UNDERSTANDING reflects the present understanding and intention of the parties and except as specified in the next sentence is not intended to constitute a binding agreement between the parties. Notwithstanding the foregoing, the provisions of Sections 9-13 hereof shall be binding upon and enforceable against the parties hereto and shall survive the termination of this MEMORANDUM OF UNDERSTANDING.

12. General. This MEMORANDUM OF UNDERSTANDING may not be amended, waived or rescinded except pursuant to a written agreement duly executed by the parties hereto. This MEMORANDUM OF UNDERSTANDING may be executed in one or more counterparts, each of which when taken together shall constitute one and the same agreement, and each of which shall constitute an original copy of this MEMORANDUM OF UNDERSTANDING. Signatures delivered via facsimile, or electronically via PDF or TIFF or JPEG or the like shall have the same legal weight and effect as original signatures.

13. Governing Law. This MEMORANDUM OF UNDERSTANDING shall be governed by and construed in accordance with the laws of the State of Florida without regard to conflicts of law principles.


**IN WITNESS WHEREOF, the PARTIES hereto have executed this Memorandum of Understanding the day and year first above written.**

**NP&G Innovations, Inc.**

  
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SIGNED BY  
For and on behalf of NP&G Innovations, Inc.

Witness: Michael J. DiGirolamo

**HSR Technologies Inc.**

  
\_\_\_\_\_  
SIGNED BY : Shah Mathias, President  
For and on behalf of the Company

Witness : \_\_\_\_\_  
Todd Reynold, Acting Secretary



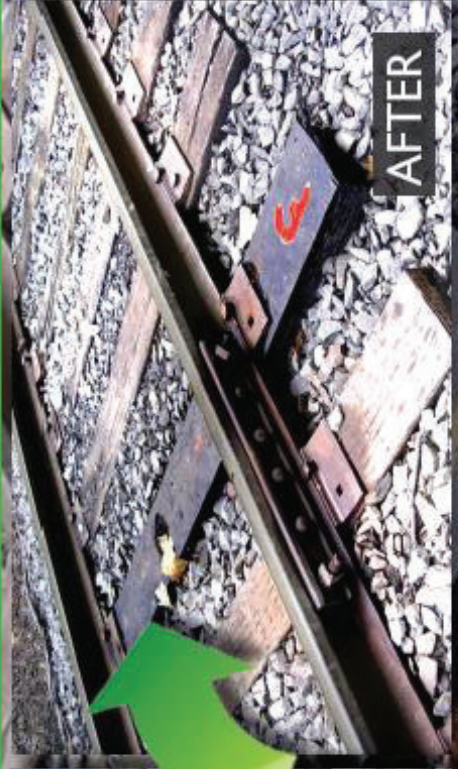


- \* Stronger than Plastic
- \* Safer than Wood
- \* More resilient than Concrete
- \* Smart Design flexibility
- \* Lighter than concrete by 50%
- \* Environmentally friendly
- \* Made from recycled waste
- \* Made in America

# NP&G INNOVATIONS



BEFORE



AFTER

The NP&G Cross-Tie™, a patented concept, provides important environmental benefits by two design attributes. First, a key structural element of the new cross-tie concept is the use of reinforced rubber sections cut from discarded tires. Nearly 300 million tires are replaced each year in the US with approximately 25% of them discarded in landfills with the associated environmental hazards. Second, the common hardwood cross-tie used in the US is treated with creosote to significantly improve its life cycle. The EPA has classified creosote as a restricted use material. Approximately 20 million cross-ties are replaced each year in the US and many are left in the rail right-of-way due to disposal costs.

Aside from the environmental benefits a key design benefit of the NP&G Cross-Tie™ is the concept's extensive design flexibility. The unique design enables it to be customized to specific applications. For example, intermixing some alternative cross-ties with wood ties can be problematic because of the mismatch in bending stiffness. The NP&G cross-tie can be designed to match the wood ties and enable intermixing.

Another life cycle benefit of the NP&G Cross-Tie™ is its durability. Operational life times should approach 50 years, significantly exceeding the typical 7-10 year lifetimes of wood ties. The combination of long life and environmentally friendly materials makes the Cross-Tie™ a cost effective alternative to all the other cross tie options available today, including concrete, plastic, composite and steel.



# NPG Innovations

[www.npginnovations.com](http://www.npginnovations.com)

NPG Innovations, Inc. was formed in 2003 with a focus on developing a [rail cross tie](#) using treads cut from discarded tires. The new product, trade named TireTie, has been subsequently tested to US and European standards. Since then a [roadside noise barrier](#) product has been developed. Other products are currently in development with patents issued and pending.

One of the motivating factors for these products is the over 300 million tires that are discarded annually in the US with millions of additional tires stacked in tire dumps. NPG has found creative ways of using these tires for new products that are often more environmentally inert than competing options.



## TireTie Rail Cross Tie



NP&G Innovations, Inc. has developed an environmentally friendly rail cross tie trade named Tire-Tie™. Patents are issued and pending.

This innovative cross tie concept uses reclaimed treads from discarded car and truck tires as a key structural embodiment of the new product. This avoids the need for preservative treatments like creosote used with traditional wood cross ties. Creosote has been designated as a restricted use material by the EPA. This limits the use of old cross ties adding to handling and disposal costs. The Tire-Tie™ is environmentally inert and fully recyclable.

The Tire-Tie™ provides a second and important use for the nearly 300 million tires discarded annually in the US and larger quantities worldwide.

The Railway Tie Association statistics show that over 16,000,000 new cross ties are installed annually in the US and comparable quantities worldwide. Most of these are replacement ties. This costs the rail industry 100's of millions of dollars yearly. The alternative Tire-Tie™ cross tie will benefit the industry significantly through enhanced life cycles, particularly in track bed environments that are unusually severe for wood ties.

The Tire-Tie™ is also uniquely suited for custom tie applications beyond the standard 8.5 foot configuration. The Tire-Tie™ cost per foot of length decreases with overall size, whereas, the wood tie cost per foot significantly increases with size. This makes the Tire-Tie™ very economically competitive for turnout, switch and bridge applications.



R-I-T



Laboratory and field testing of engineering samples have shown that the concept meets or exceeds the American Railway Engineering and Maintenance of Way Association (AREMA) guidelines for alternative cross ties and the European EN standards.



## TireTie Field Testing

Engineering samples of the TireTie™ cross ties were installed on a spur line of the New York Susquehanna Rail Way in Lafayette, NY on June 14, 2004. One tie is in a straight section of track and the others are on a 3 degree curve. The ties continue to hold up with [no signs of functional degradation as of July 2020, over 16 years later.](#)

### New York, Susquehanna & Western Railway



Ties being set by a cherry picker and backhoe.



Tie being set with a tie setter.



Two ties on a 3 degree curve with standard tie plates and rail spikes.

## TireTie Laboratory Testing

Laboratory testing of the Tire-Tie™ has been completed at the Vossloh Switch Systems Laboratory in France and at the RIT Center for Integrated Manufacturing Studies in Rochester, NY.

The Vossloh testing included static 3 point bending, screw pullout and lateral load cyclic fatigue testing to EN13146-N specifications. A comparison was made using a European wood standard tie. All tests on the Tire-Tie™ passed the EN criteria for the testing at the RIT CIMS laboratory was done using a 2-axis dynamic test machine designed by NPG innovations. Several variations of the Tire-Tie™ were tested to the AREMA and FRA Transportation Test Centers (TTC) recommended test conditions. Comparative testing was also done on a standard red oak tie.



The Tire-Tie™ passed the EN13147-N 2 million cycle lateral fatigue test at Vossloh. The vertical base plate deflection was < 0.7 mm throughout the test. The lateral deflection was < 0.68 mm throughout the test.



Several variations of Vossloh faster screws were pulled out tested. They ranged from 44.7 kN (10050 lbs.) for the SS87 screw to 66.4 kN (14927 lbs.) for the 3V screw. For comparison the wood tie pullout force for the 3V screw was 60.4 kN (13578 lbs.).



The Tire-Tie™ surpassed the TTCI requirement of 2 million load cycles at RIT CIMS without excessive tie plate abrasion to the tie surface or excessive rail lateral motion. The test was taken out to 2.8 million cycles and the rail deflection remained relatively constant throughout the test at 2.7 to 3.7 mm (0.11 to 0.15 inches) as shown in the following table.



Static 3-point bend testing showed that the Tire-Tie™ surpasses the AREMA and TTCI requirements. The Tire-Tie™ was found to be stiffer than standard oak ties as shown by the following plot.



## Roadside Noise Barrier

- ★ High noise attenuation
- ★ Environmentally inert
- ★ Long Lasting

