

*Questions and Answers from June 11, 2020 webinar*

## **LIVE DEMO OF DIREXYON PLATFORM FOR CITY INFRASTRUCTURE STRATEGIC INVESTMENT PLANNING**

**Q - You said that maintenance deficits could be calculated with your first scenario. Why?**

A - Yes. The first scenario was the unconstrained one. This means that decisions were applied solely on the basis service level criteria, with no regard for budget, capacity or cross-asset synchronization considerations. Therefore, in the first year, we performed all interventions required to bring back the different assets to their required level of service. That huge first-year investment then became a great proxy to evaluate the maintenance deficit.

**Q - We don't have the data for all asset attributes, as you were showing in the demo. What can we do if we have incomplete data?**

A - In fact, nobody has complete data sets. But, in all cases, you end up realizing that you're more "data-rich" than you think. You only need a few pieces of information in each infrastructure category to get the ball rolling. In addition, lots of deductions can be made from existing data. The experts know their assets, and they can also contribute to filling in the gaps. For example, if we're talking about sewer pipes, you can start off by entering the year or decade when they were installed. From that, you can make deductions about the pipes' diameter and the kind of material they're made of, and you can even forecast the actual condition they're in.

**Q - How do you achieve work prioritization?**

A - The rules are defined by the City. A criticality index has been created based on the asset's condition, its relative importance, and what we call an optionality factor, to make sure to not lose any intervention options, such as rehab, because the asset is too deteriorated. It's all about not missing any high cost/value opportunities.

**Q - You said you were gathering information from various data sources. How?**

A - In fact, there are multiple ways to do it, but the preferred way is using the built-in generic importing tool. It allows users to build their own importing process by incorporating source files in standard format and managing the rules for missing or inconsistent data. The tool also supports the importing of geolocation data and shape files.

**Q - We're using ESRI and SAP. Can those be integrated in the platform?**

A - ARCGIS from ESRI allows for easy-access file extraction, and our importing tool has been built to manage various geolocation data formats, including shape files. Most of our client uses SAP, from which they extract, for example, flat files in a pre-defined format that can be easily treated by the DIREXYON platform importing tool.

**Q - How you evaluate and integrate into the simulation model the unexpected and rare events such as climatic disasters (frost, flooding, etc.) that impact the infrastructures and investments?**

A - The DIREXYON platform can model any event but if it is unexpected or rare, maybe you want to see it as an alternative or "what if scenario" because, if you do a simulation and you have a lot of deterioration, you don't want the effect to just be blurred into the model. So, we mainly do it with alternative scenarios like "What if the gross product of the country or the budget gets higher or lower than expected results?". So, it's all "what if" scenarios that are easy to perform with the platform.