Calendars Effect on Schedules

February 25, 2015

Purpose

The purpose of this document is to help Project Managers and Functional Groups understand how calendars affect schedule dates and float.

Understanding Calendars in P6

In a P6 schedule, the calendar represents the days on which the work for a specific activity may occur. A calendar has work and non-work days.

An activity's duration is only applied to the work days on an individual calendar. This helps show the true impact of an activity's duration on the schedule dates. For example, if an activity has a duration of 5 working days, the start and end dates can vary based on whether it is during a holiday period or not.

A 5 day activity that begins on Monday on a week with no holidays will end on Friday.

Su 11/2	M 11/3	T 11/4	W 11/5	Th 11/6	Fr 11/7	Sa 11/8
NON WORK (WKND)	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	NON WORK (WKND)

A 5 day activity that starts on Monday on a week with a two day holiday will end on the following Tuesday, accounting for the holiday and the weekend.

Su 11/23	M 11/24	T 11/25	W 11/26	Th 11/27	F 11/28	Sa 11/29
NON WORK (WKND)	DAY 1	DAY 2	DAY 3	NON WORK (HOLIDAY)	NON WORK (HOLIDAY)	NON WORK (WKND)

Su 11/30	M 12/1	T 12/2
NON WORK (WKND)	DAY 4	DAY 5

Types of calendars

1. **5 Day Work Week with Holidays** – This calendar is used on activities that can be worked on year-round during a regular MnDOT workday.
   - *Common use*: The majority of activities in a design schedule use this calendar.
   - *Non-work days*: Weekends and holidays.
2. **7 Day Calendar** or **5 Day Work Week with No Holidays** – This calendar is used on activities that are NOT affected by holidays or weather. The 7 day calendar is used on activities not affected by weekends (a 30 calendar day review period) and the 5 Day is used on activities that are affected by weekends (advertising).
   - *Common use*: Activities that represent a legally obligated period of time expressed in calendar days (e.g. 180 day MPCA permit review period; 90 day vacate notice); or, in construction, activities that do not require staff or labor (e.g. cure time)
   - *Non-work days*: None
3. **Seasonal Calendar** – This calendar is used on activities that have seasonal restrictions on work.
   - *Common use*: Activities that cannot occur during the winter months (e.g. ADA field walks, wetland delineations, ESA drilling)
   - *Non-work days*: Weekends, holidays, and any weather-restricted days.

Calendar Frequently Asked Questions

Why is my 10 day activity scheduled to occur over five months?

If an activity is on a seasonal calendar and begins just before a non-work period, the schedule will push the completion date of that activity to a date AFTER the non-work period. This significantly reduces project float and can even put a project into negative float. In the example below, ADA1010 Conduct ADA Field Walk has an original duration of 10 days, but it cannot occur between November 1st and April 1st. Therefore, even though it begins on 10/28/14, the schedule will say it cannot be completed until 4/8/15.

Why do I have different float numbers on different activities on my critical path? *OR* Why do I have activities with less float (or more negative float) than my project float?

Having activities on different calendars in a single sequence of activities or "float path" can result in variances in the amount of float on each of those activities. If an activity is on a 7 day calendar it will have higher float values (both positive and negative) than an activity on a 5 day calendar because it will count weekends and holidays into the float calculation.

In the example below the WDP1010 Permit Review activity is on a 7 day calendar and is showing higher float values than the adjacent activities.

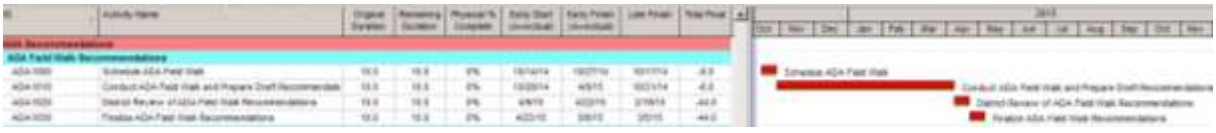
If an activity along the path is on a seasonal calendar, there are two things that can happen.

1. The activities leading up to and including the non-work period may have less float (or more negative float) than the activities after the non-work period.

   In the example below, ESA2520 Complete Drilling is on a seasonal calendar and has -2 days of negative float. It's predecessor, ESA2500 Develop Work Plan has -44 days negative float because the float is calculating the number of days it would have to recover to make ESA 2520 begin before the non-work period.

2. The activities after the non-work period have less float (or more negative float) than the activities on or before the non-work period.

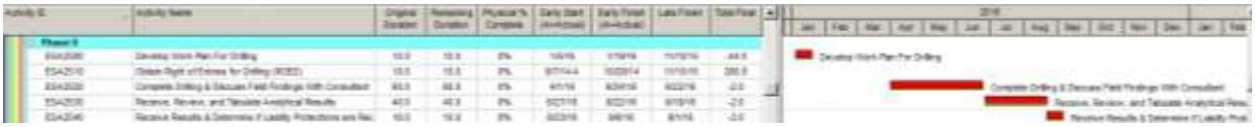
   In the example below, ADA1010 Conduct ADA Walk is on a seasonal calendar. By completing the activity after the non-work period, it pushes the entire project into the next calendar year and increases the amount of negative float on subsequent activities.



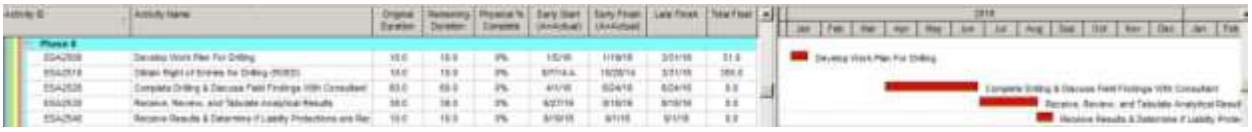
What strategies can I use to reduce negative float on a float path that includes a seasonal calendar?

When you have activities with negative float along a float path that includes a seasonal calendar, it is important to look at the activities before AND after the non-work period for opportunities to gain float.

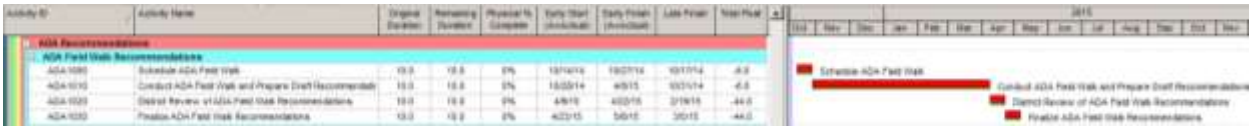
1. In the example below, activity ESA2520 is on a seasonal calendar and cannot occur between Nov 1 and April 1. It has 2 days negative float because it will end 2 days past its deadline date if it starts on April 1. ESA2500 is showing 44 days of negative float because in order for ESA2520 to gain those two days, it has to end two days before the non-work period begins (Nov1).



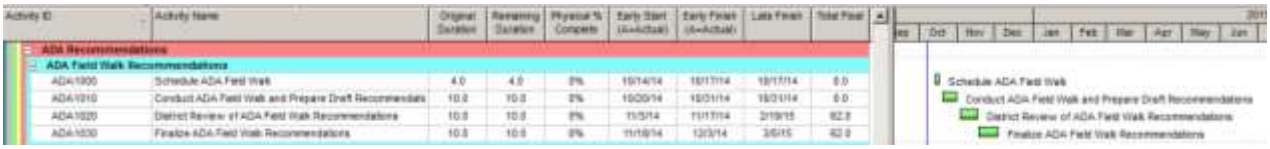
Solution: By reducing the duration of the successor activity (ESA2530) by 2 days (instead of trying to recover 44 days on ESA2500), it recovers the negative float on ESA2520 and puts ESA2500 into positive float because its deadline has moved to March 31st.



2. In this example, activity ADA1010 cannot occur between Nov. 1 and April 1 and is showing 6 days of negative float. Having the field walk activity complete in April places the successor activities (ADA1020 and ADA1030) in 44 days of negative float because they need to be completed in February and March to maintain the project on schedule.



Solution: By reducing the duration on the predecessor activity (ADA1000) by 6 days (instead of trying to recover 44 days on the successor activities), it recovers the negative float on ADA1010 and puts the successor activities in positive float because they will now finish much earlier than the February and March deadline dates.



For More Information

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