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| *E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\DSC04456.JPG* | E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\DSC04454.JPG |
| *Phaterak\_lower:Inlet* | Phaterak\_lower: Outlet |
| *E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\DSC04517.JPG* | E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\FDC\photo1_fdc_TriBhuvan_FdcBhuvanTGW_LinearPlantation_Line_cf5d0af3a08b907_13_7_15_16_10_2019.jpg |
| *Phaterak\_higher:Inlet* | Phaterak\_higher:Outlet |
| *E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\FDC\photo1_fdc_TriBhuvan_FdcBhuvanTGW_LinearPlantation_Line_cf5d0af3a08b907_8_6_2_19_10_2019.jpg* | E:\IceStupa_Study\Sitevisit-Oct2019\Photos_Sitevisit\DSC04670.JPG |
| *Phuktsey:inlet* | Phuktsey:outlet (icetower active) |

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| E:\IceStupa_Study\QGIS_tool\result_analyze\Phaterak_locn_optimallocn_existinglocn.JPG |
| Phaterak\_lower: Existing inlet-outlet (Vs) Optimal location comparision |
| E:\IceStupa_Study\QGIS_tool\result_analyze\Phaterak_locn_pipelength_straightpath_Zcomparision.JPG |
| Phaterak\_lower: Existing inlet-outlet (Vs) Calculated inlet-outlet comparision |

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| Location\_Phaterak lower | Head | Horizontal Distance component | Distance |
| Existing | 42 m | 126m |  |
| Nearest Optimal | 60 m | 239m |  |

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| Phuktsey: Existing inlet-outlet (Vs) Optimal location comparison |
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| Phuktsey: Existing inlet-outlet (Vs) Optimal location comparison |

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| Location\_Phuktsey | Head(m) | Horizontal Distance component(m) | Distance(m) | Head/Distance |
| Existing | 51 | 374 | 377.4613 | 0.99083 |
| Distance\_optimized | 60 | 433.5 | 437.6326 | 0.990557 |

Drawbacks with existing dataset:

i) DEM: Currently ASW3D with 30m posting. Accuracy:??(Check)

-To get precise head difference values, so that the inlet and outlet identified will be precise to within 5m vertical error

-Noticed DEM elevation difference(head\_dem) is less than the on-site head difference(head\_onsite)

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| Location | Head\_dem | Head\_onsite |
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ii) Accurate Water stream layer (need Bhuvan Suvidha)

-To get positionally accurate dilineation of water stream, so that the suitable inlet and outlets

Future work:

-> Accurate inlet-outlet distance: Use least cost path calculation for pipeline path.

-> Evaluate the constraints for identifying the optimal outlet and inlet, to give better decision making onsite.

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| Phuktsey(Shaa) optimal icetower locations |

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| Phyang optimal icetower locations |